MacDon®

D65 Harvest Header® for Combines

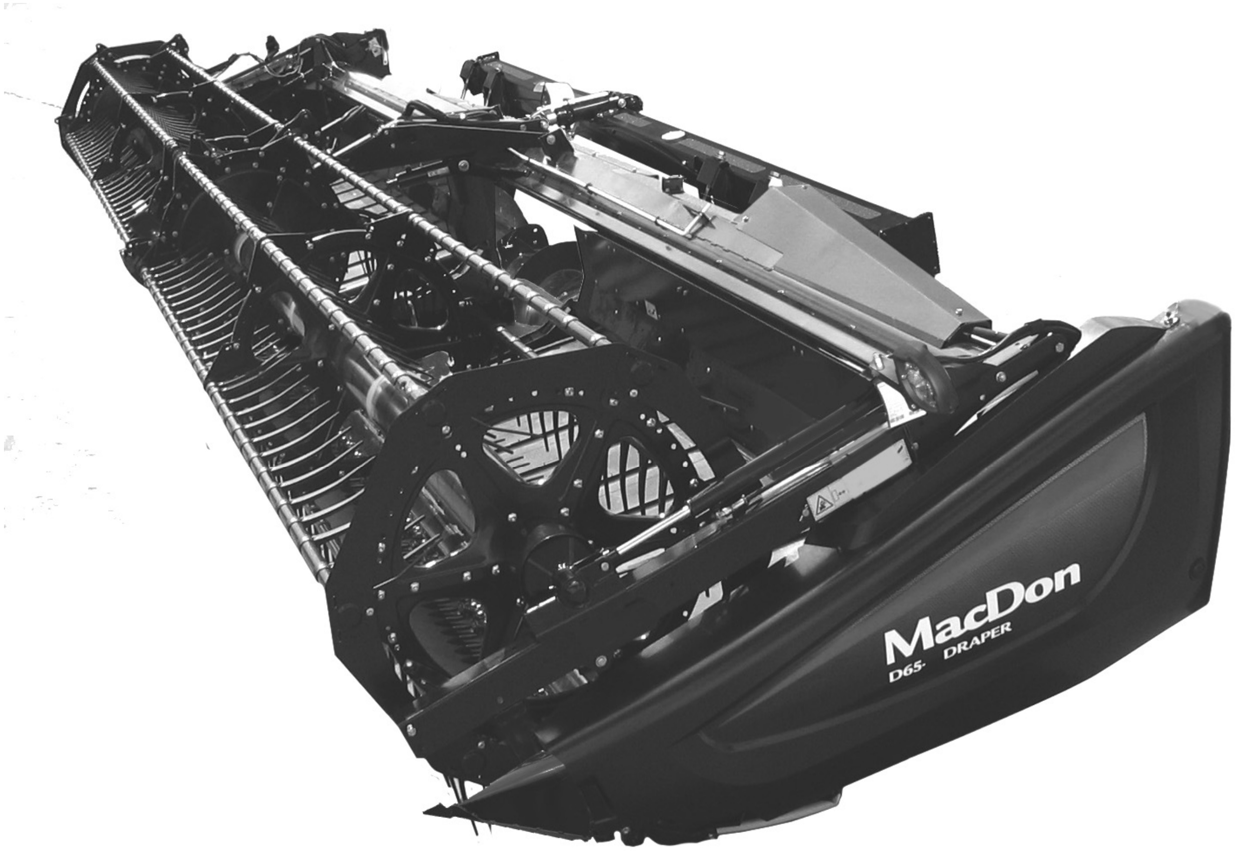
OPERATOR'S MANUAL

Part #169593 Rev. B

$15

The harvesting specialists worldwide.

This Manual contains instructions for "SAFETY", "OPERATION", and "MAINTENANCE/SERVICE" information for your new MacDon Model D65 Harvest Header® for combines.



MACDON D65 HARVEST HEADER®

1 INTRODUCTION

This instructional manual contains information on the D65 Harvest Header® and the CA25 Combine Adapter. It must be used in conjunction with your Combine Operator's Manual.

The D65 Harvest Header® is specially designed as a straight cut header, and is equipped to work well in all straight cut conditions, whether cutting on or above the ground.

The CA25 Combine Adapter allows any D65 header to be easily attached to your specific combine.

CAREFULLY READ ALL THE MATERIAL PROVIDED BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE, OR USE THE MACHINE.

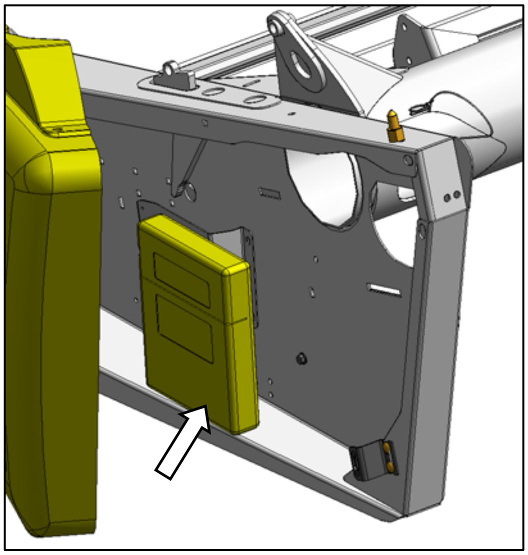
Use this manual as your first source of information about the machine. If you follow the instructions given here, your header will work well for many years. If you require more detailed service information, a Service Manual is available from your MacDon Dealer.

The Table of Contents and the Index will guide you to specific areas. Study the Table of Contents to familiarize yourself with how the material is organized.

Keep this manual handy for frequent reference, and to pass on to new Operators or Owners.

A storage case for this manual is located inside the header left endshield.

Call your MacDon Dealer if you need assistance, information, or additional copies of this manual.



Published November, 2012

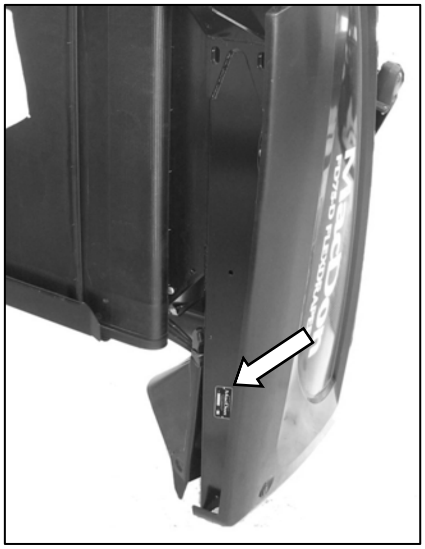
2 MODEL AND SERIAL NUMBER

NOTE: Right hand (RH) and left hand (LH) designations are determined from the Operator's position, facing forward.

Record the Model Number, Serial Number, and Model Year of the Header, Slow Speed Transport/Stabilizer Wheel Option (if installed), and the Combine Adapter on the lines below:

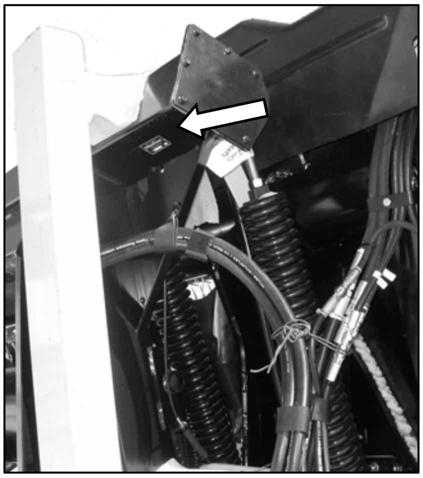
HEADER MODEL______________SERIAL NO._________________YEAR_____

Serial Number Plate is located on the underside of the LH endsheet.



ADAPTER MODEL________SERIAL NO.______________YEAR_____

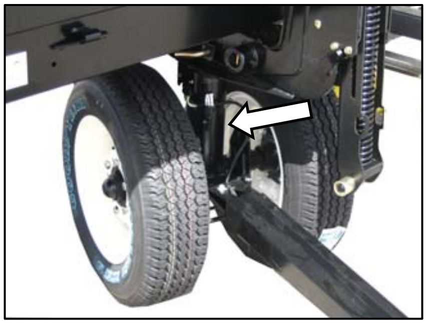
Serial Number Plate is located on the underside of the reservoir at the right end.



SLOW SPEED TRANSPORT/STABILIZER WHEEL OPTION

SERIAL NO.__________________YEAR_____

Serial Number Plate is located on the left hand wheel pivot tube.



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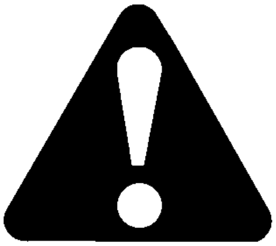
3 SAFETY

3.1 SAFETY ALERT SYMBOL



This safety alert symbol indicates important safety messages in this manual and on safety decals on the machine.

This symbol means:

- ATTENTION!
- BECOME ALERT!
- YOUR SAFETY IS INVOLVED!

Carefully read and follow the safety message accompanying this symbol.

WHY IS SAFETY IMPORTANT TO YOU?

- ACCIDENTS DISABLE AND KILL.
- ACCIDENTS COST.
- ACCIDENTS CAN BE AVOIDED.

3.2 SIGNAL WORDS

Note the use of the signal words DANGER, WARNING, and CAUTION with safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It is also used to alert against unsafe practices.

CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It is also used as a reminder of good safety practices.

3.3 SAFETY DECALS

a. The safety decals appear on the header at the locations shown on pages 7 to 11.

b. Keep safety decals clean and legible at all times.

c. Replace safety decals that are missing or become illegible.

d. If original parts on which a safety decal was installed are replaced, be sure the repair part also bears the current safety decal.

e. Safety decals are available from your MacDon Dealer Parts Department.

3.3.1 Safety Decal Installation

a. Be sure the installation area is clean and dry.

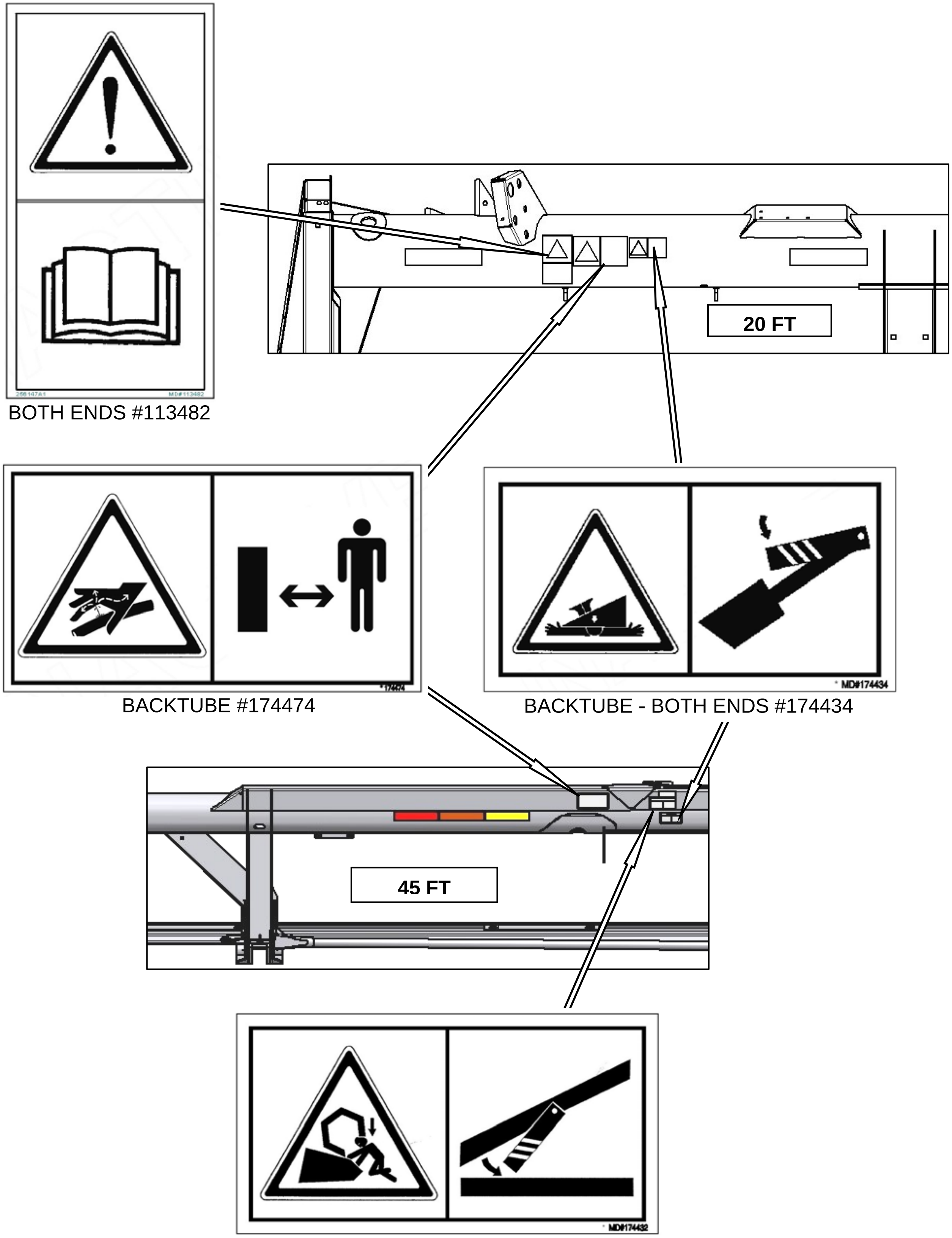
b. Decide on the exact location before you remove the decal backing paper.

c. Remove the smaller portion of the split backing paper.

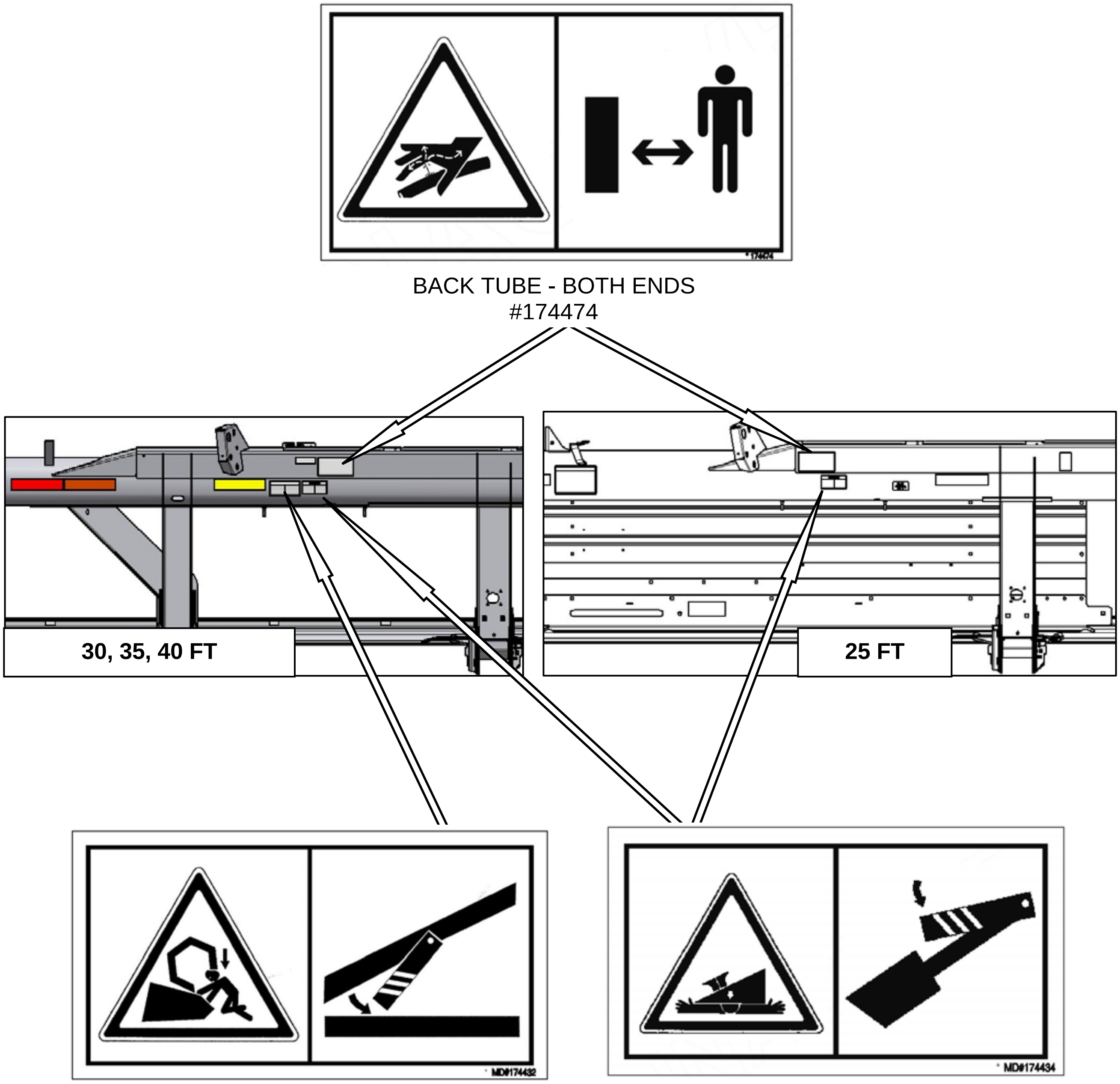
d. Place the decal in position and slowly peel back the remaining paper, smoothing the decal as it is applied.

e. Small air pockets can be smoothed out or pricked with a pin.

3.3.2 Safety Decal Locations


MD#113482
BOTH ENDS #113482
20 FT
174474
BACKTUBE #174474
MD#174434
BACKTUBE - BOTH ENDS #174434
45 FT
MD#174432
BACKTUBE #174432

Safety Decal Locations (cont'd)

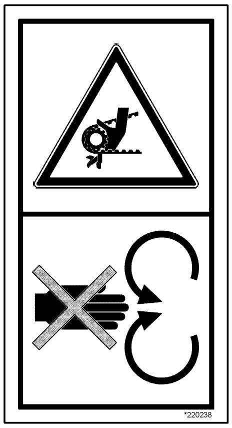

174474
30, 35, 40 FT
25 FT
MD#174432
MD#174434

BACK TUBE - BOTH ENDS
#174474

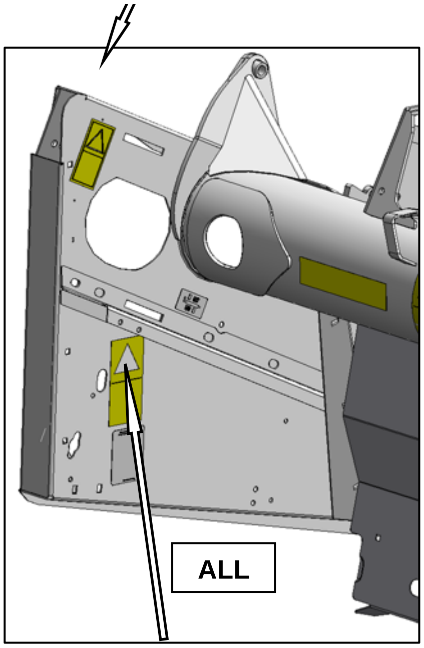
BACK TUBE - DOUBLE REEL ONLY
#174432

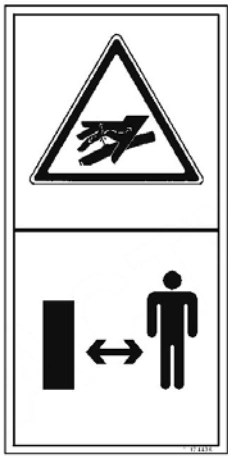
BACK TUBE - BOTH ENDS
#174434

Safety Decal Locations (cont'd)

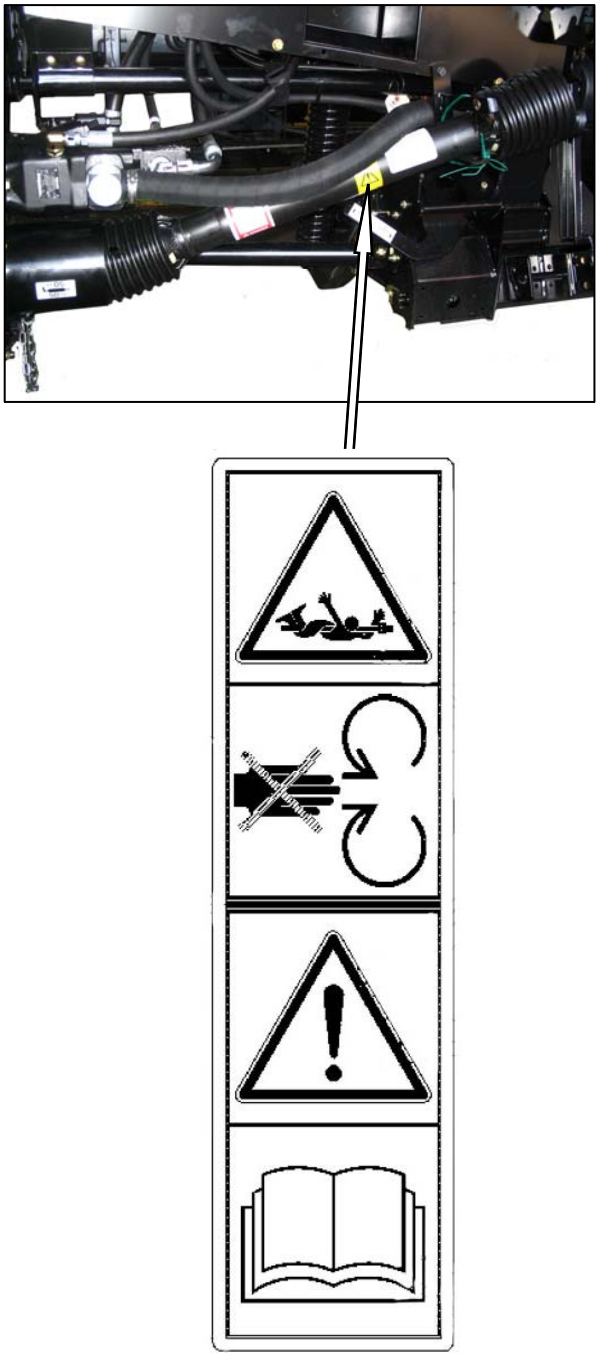


BOTH ENDS - DOUBLE KNIFE
LEFT END - SINGLE KNIFE
#220238



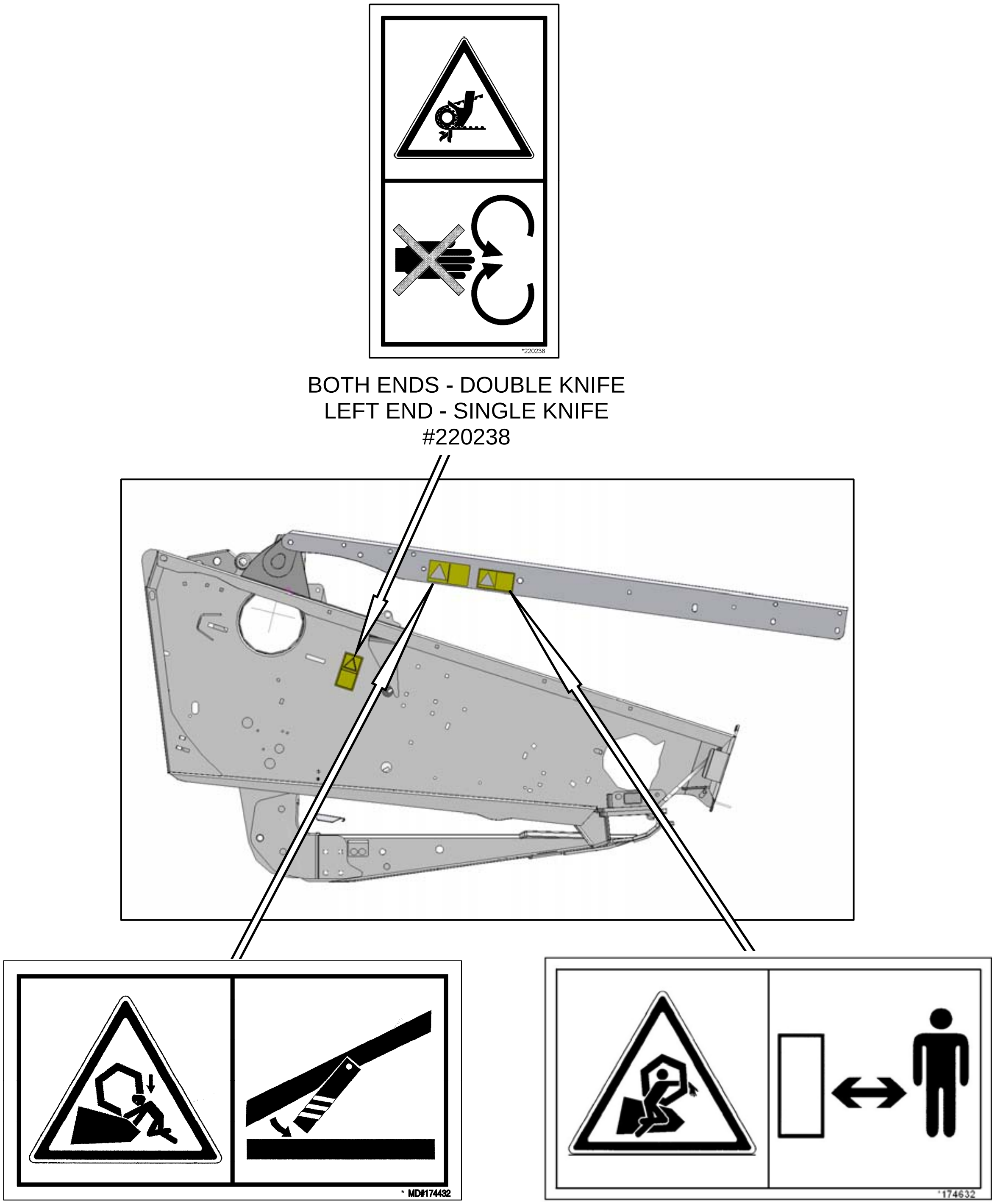


LEFT END #174436



DRIVELINE
#194521

Safety Decal Locations (cont'd)

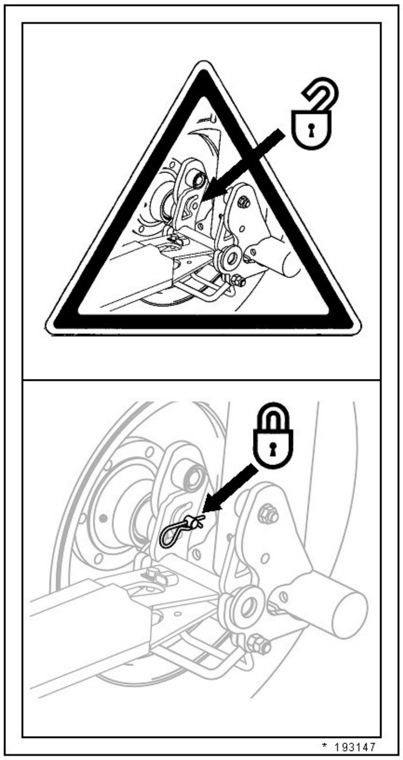

*220238
* MD#174432
*174632

BOTH ENDS - DOUBLE KNIFE
LEFT END - SINGLE KNIFE
#220238

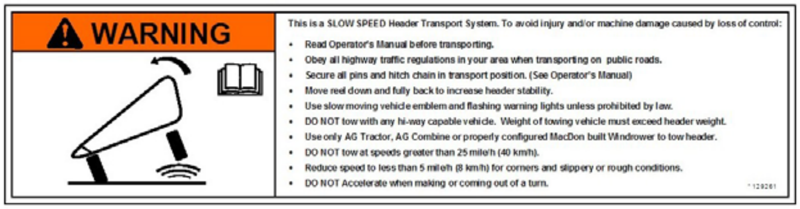
REEL ARMS
#174432

LH & RH REEL ARMS
#174632

Safety Decal Locations (cont'd)



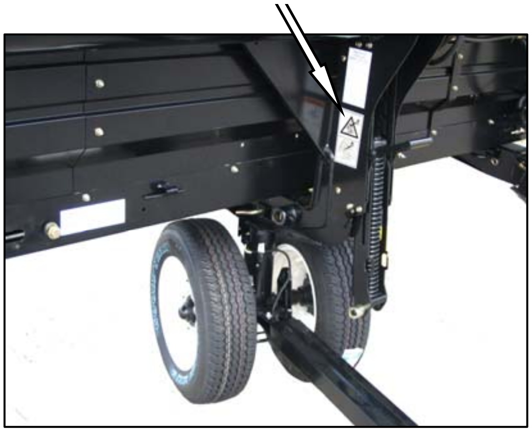
FRONT TRANSPORT LEG
#193147

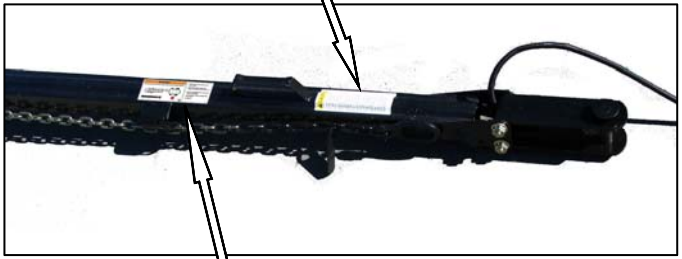

WARNING

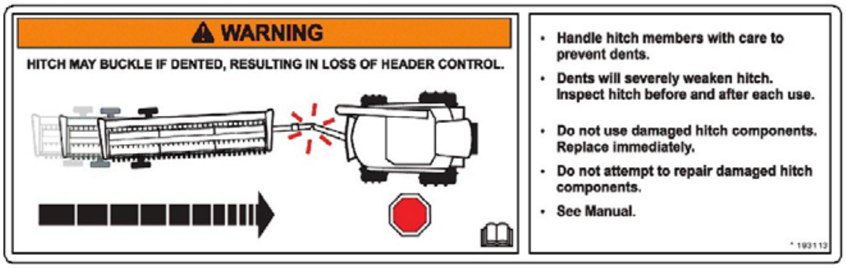
This is a SLOW SPEED Header Transport System. To avoid injury and/or machine damage caused by loss of control:

- Read Operator's Manual before transporting.
- Obey all highway traffic regulations in your area when transporting on public roads.
- Secure all pins and hitch chain in transport position. (See Operator's Manual)
- Move reel down and fully back to increase header stability.
- Use slow moving vehicle emblem and flashing warning lights unless prohibited by law.
- DO NOT tow with any hi-way capable vehicle. Weight of towing vehicle must exceed header weight.
- Use only AG Tractor, AG Combine or properly configured MacDon built Windrower to tow header.
- DO NOT tow at speeds greater than 25 mile/h (40 km/h).
- Reduce speed to less than 5 mile/h (8 km/h) for corners and slippery or rough conditions.
- DO NOT Accelerate when making or coming out of a turn.

TOW-BAR
#129261





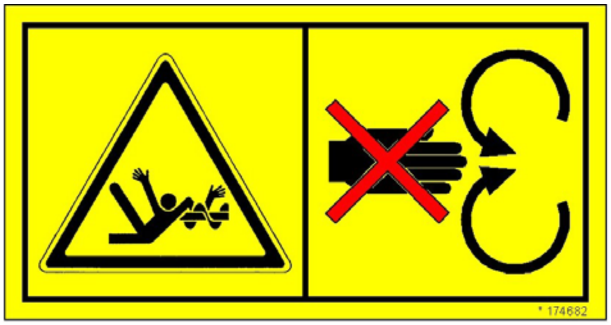

WARNING

HITCH MAY BUCKLE IF DENTED, RESULTING IN LOSS OF HEADER CONTROL.

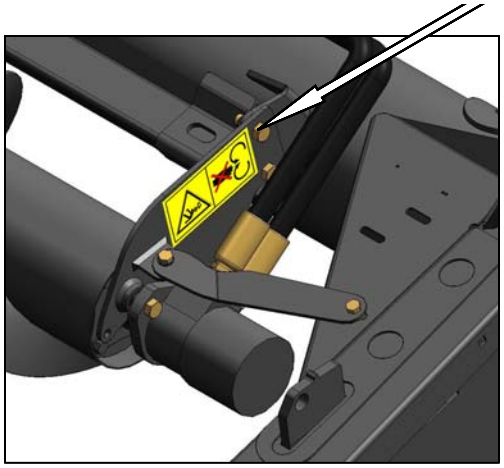
- Handle hitch members with care to prevent dents.
- Dents will severely weaken hitch. Inspect hitch before and after each use.
- Do not use damaged hitch components. Replace immediately.
- Do not attempt to repair damaged hitch components.
- See Manual.

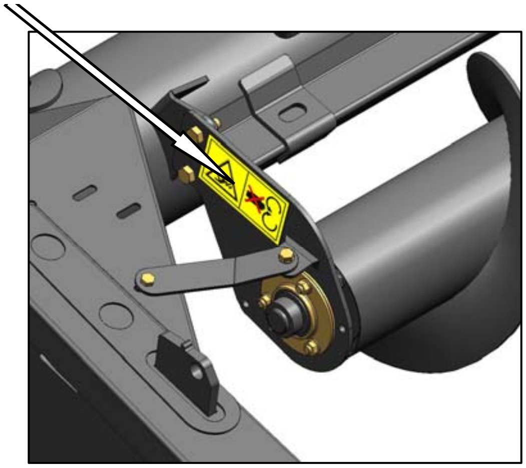
TOW-BAR
#193113

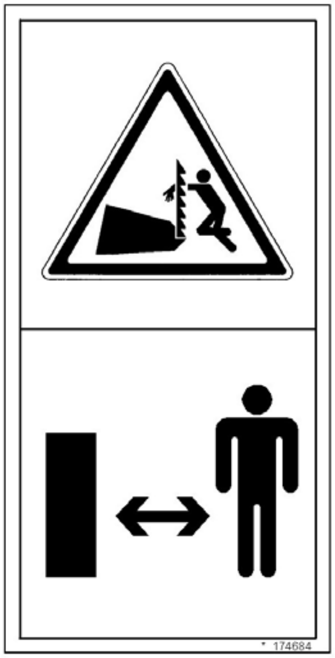
Safety Decal Locations (cont'd)

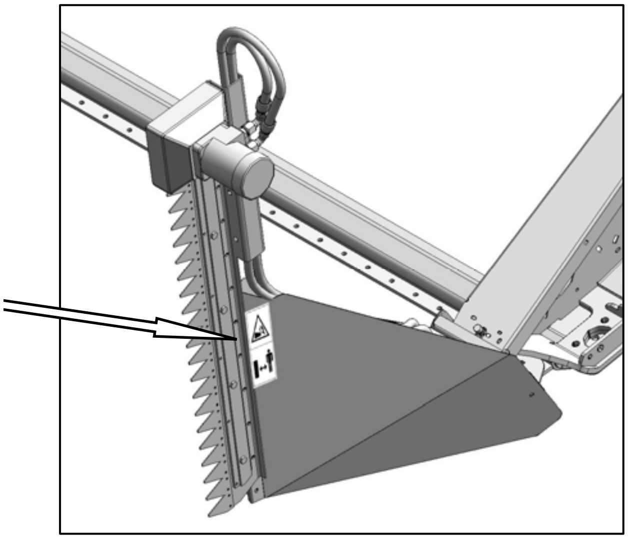


UPPER CROSS AUGER
#174682



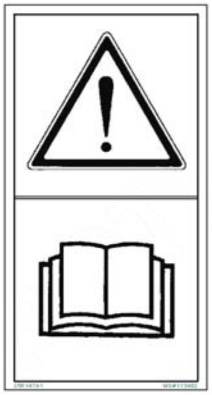






LH AND RH
VERTICAL KNIFE
#174684

3.3.3 *Safety Sign Definitions*



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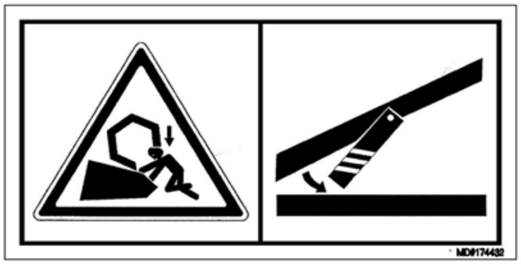
General Hazard Pertaining To Machine Operation And Servicing.

CAUTION

To avoid injury or death from improper or unsafe machine operation:

- Read the Operator's Manual, and follow all safety instructions. If you do not have a manual, obtain one from your dealer.
- Do not allow untrained persons to operate the machine.
- Review safety instructions with all operators annually.
- Ensure that all safety signs are installed and legible.
- Make certain everyone is clear of machine before starting engine and during operation.
- Keep riders off the machine.
- Keep all shields in place, and stay clear of moving parts.
- Disengage header drive, put transmission in neutral and wait for all movement to stop before leaving operator's position.
- Shut off engine and remove key from ignition before servicing, adjusting, lubricating, cleaning, or unplugging machine.
- Engage locks to prevent lowering of header or reel before servicing in the raised position.
- Use slow moving vehicle emblem and flashing warning lights when operating on roadways unless prohibited by law.

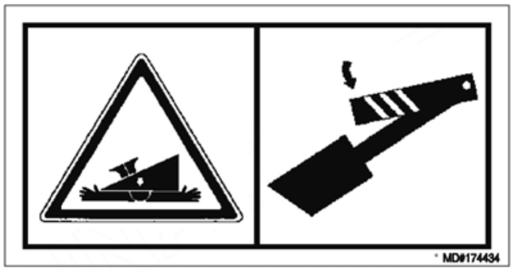


174432

Reel Hazard

WARNING

- To avoid injury from fall of raised reel; fully raise reel, stop engine, remove key, and engage mechanical lock on each reel support arm before working on or under reel.
- See Operator's Manual.

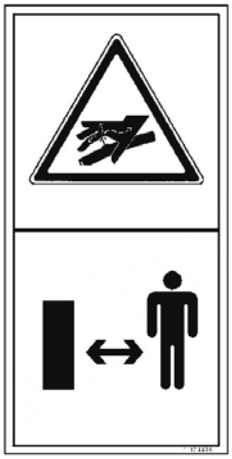


174434

Header Hazard

DANGER

- Rest header on ground or engage mechanical locks before going under unit.



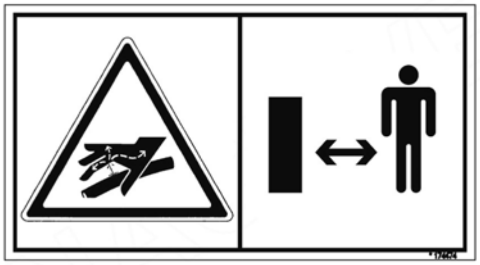
174436

High Pressure Oil Hazard

WARNING

Do not go near leaks

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.



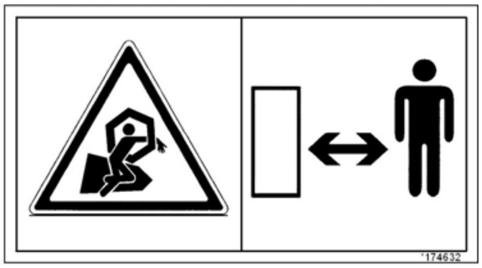
174474

Hydraulic Oil Pressure Hazard

CAUTION

Do not go near leaks

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help.
- Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve pressure before loosening fittings.

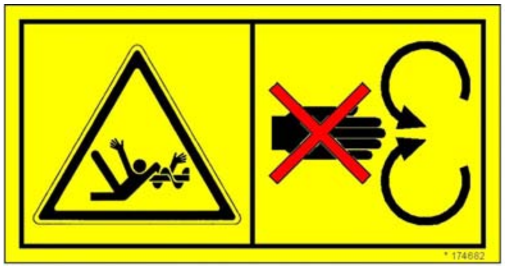


174632

Reel Entanglement Hazard

CAUTION

- To avoid injury from entanglement with rotating reel, stand clear of header while machine is running.

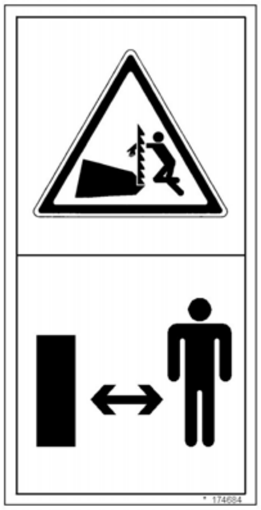


174682

Auger Entanglement Hazard

CAUTION

- To avoid injury from entanglement with rotating auger, stand clear of header while machine is running.



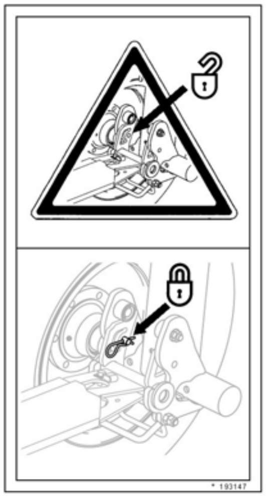
174684

Sharp Component Hazard

CAUTION

Knife Sections are Sharp

- Wear heavy canvas or leather gloves when working with knife.
- Be sure no one is near the vertical knife when removing or rotating knife.



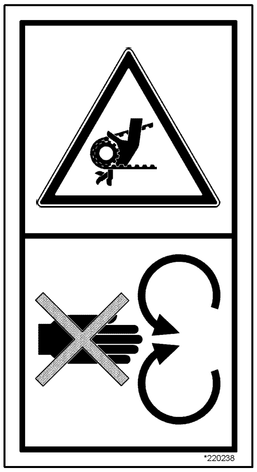
193147

Transport/Roading Hazard

WARNING

Before Transporting

- Ensure tow-bar lock mechanism is locked.



220238

Keep Shields in Place Hazard

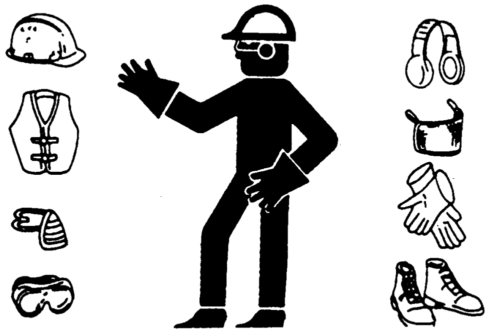
WARNING

- To avoid injury, stop engine before opening power drive system shield.
- Keep all shields in place.

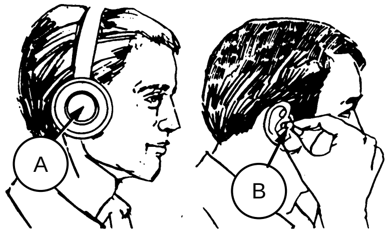
3.4 GENERAL SAFETY

CAUTION

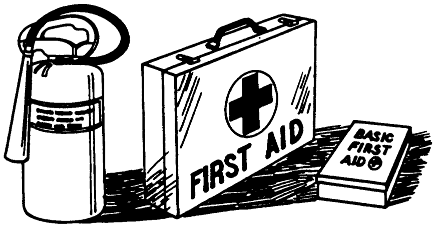
- **The following are general farm safety precautions that should be part of your operating procedure for all types of machinery.**
- **Protect yourself. When assembling, operating and servicing machinery, wear all the protective clothing and personal safety devices that COULD be necessary for the job at hand. Don't take chances.**
- **You may need:**



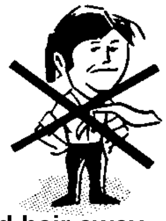
  - **a hard hat.**
  - **protective shoes with slip resistant soles.**
  - **protective glasses or goggles.**
  - **heavy gloves.**
  - **wet weather gear.**
  - **respirator or filter mask.**



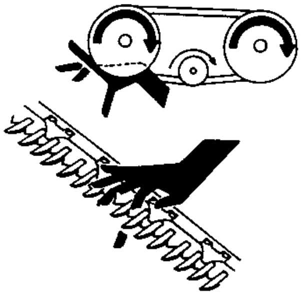
  - **hearing protection. Be aware that prolonged exposure to loud noise can cause impairment or loss of hearing. Wearing a suitable hearing protective device such as ear muffs (A) or ear plugs (B) protects against objectionable or loud noises.**



- **Provide a first-aid kit for use in case of emergencies.**
- **Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.**
- **Keep young children away from machinery at all times.**
- **Be aware that accidents often happen when the Operator is tired or in a hurry to get finished. Take the time to consider the safest way. Never ignore warning signs of fatigue.**



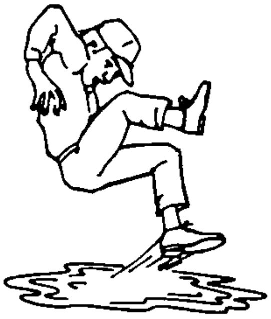
- **Wear close-fitting clothing and cover long hair.**
- **Never wear dangling items such as scarves or bracelets.**
- **Keep hands, feet, clothing and hair away from moving parts. Never attempt to clear obstructions or objects from a machine while the engine is running.**



- **Keep all shields in place. Never alter or remove safety equipment. Make sure driveline guards can rotate independently of the shaft and can telescope freely.**

(continued next page)

- **Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.**
- **Do NOT modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.**
- **Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.**



- **Keep the area used for servicing machinery clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.**
- **Use adequate light for the job at hand.**
- **Keep machinery clean. Straw and chaff on a hot engine are a fire hazard. Do NOT allow oil or grease to accumulate on service platforms, ladders or controls. Clean machines before storage.**
- **Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.**
- **When storing machinery, cover sharp or extending components to prevent injury from accidental contact.**

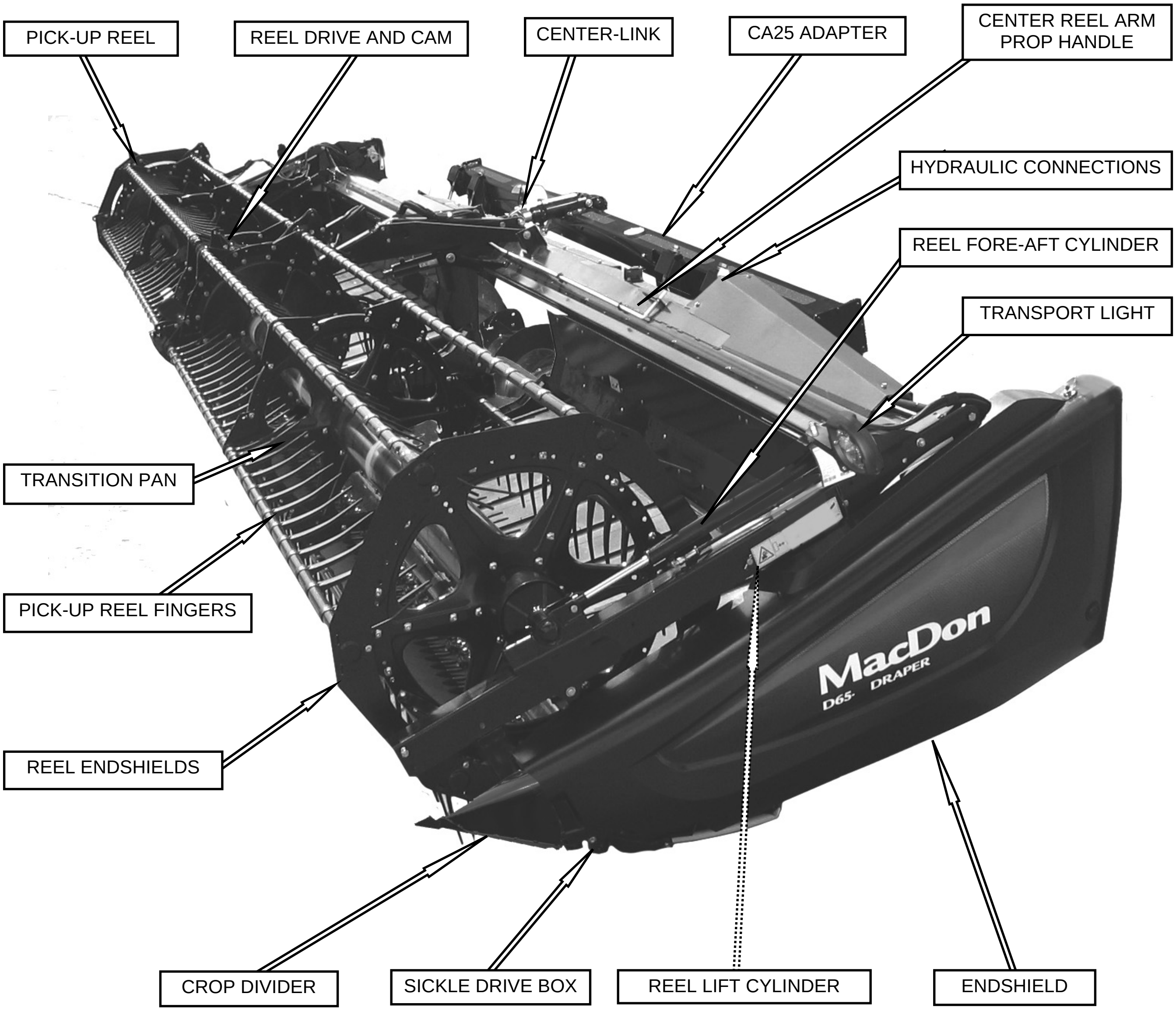
4 DEFINITIONS

The following terms/abbreviations may be used in this manual:

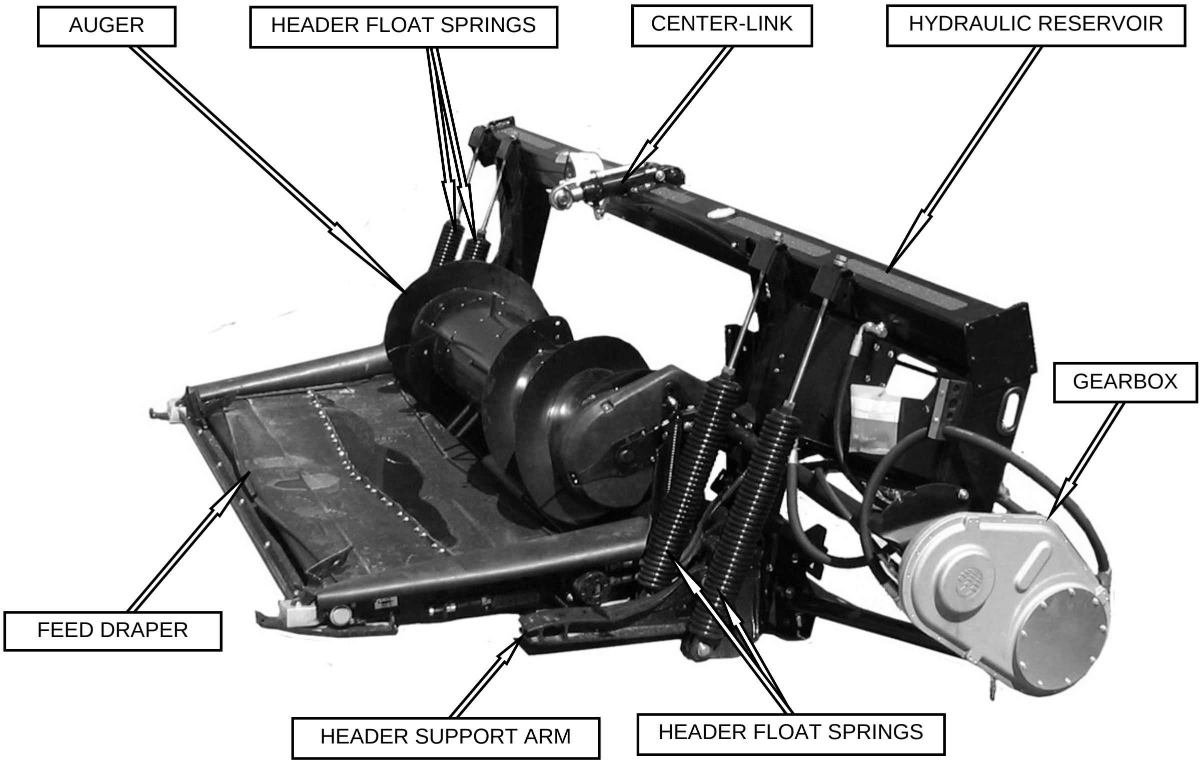
TERM	DEFINITION
AHHC	Automatic Header Height Control
API	American Petroleum Institute
ASTM	American Society Of Testing and Materials
Center-link	A hydraulic cylinder or turnbuckle type link between the header and the machine that tilts the header
DK	Double Knife
GSL	Ground Speed Lever
Header	A machine that cuts and lays crop into a windrow, and is attached to a self-propelled windrower or combine
rpm	Revolutions per minute
SAE	Society Of Automotive Engineers
SK	Single Knife
spm	Strokes per minute
Tractor	Agricultural type tractor
Truck	A four-wheel highway/road vehicle weighing no less than 7500 lb. (3400 kg)

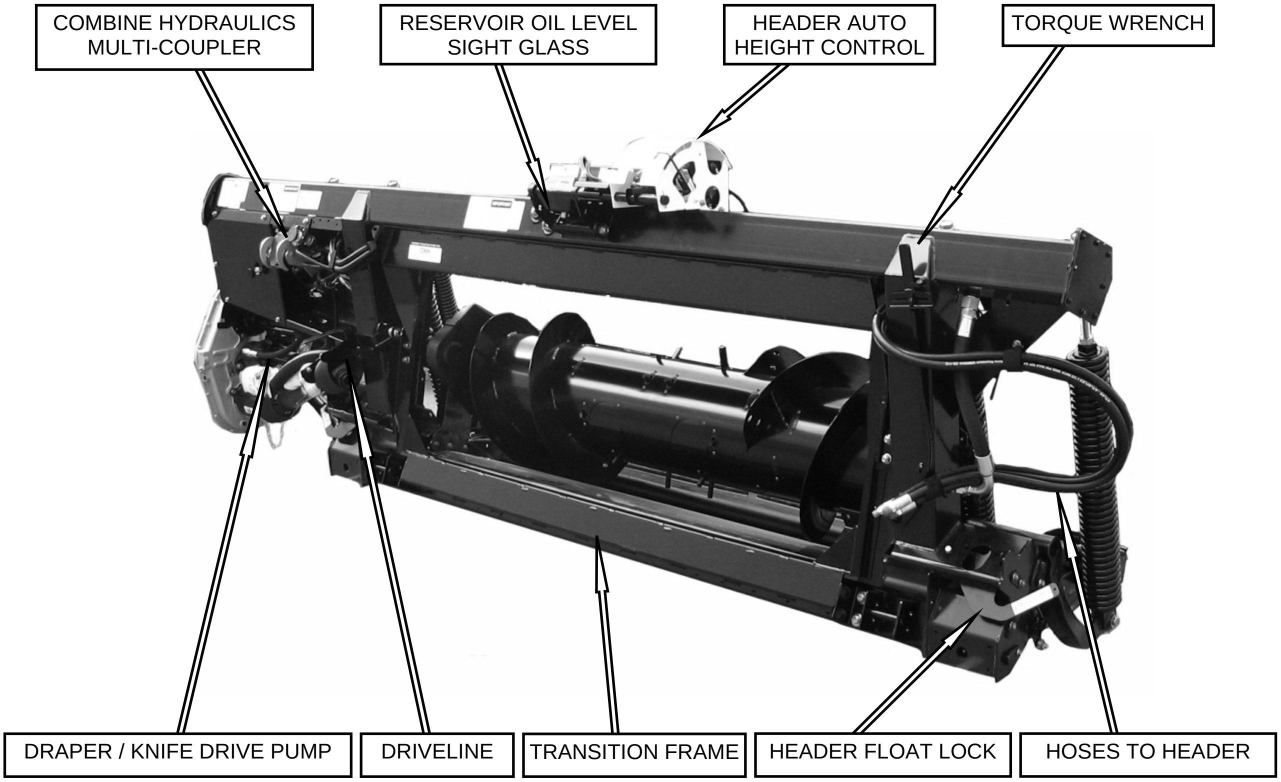
5 COMPONENT IDENTIFICATION

5.1 COMBINE HEADER


PICK-UP REEL
REEL DRIVE AND CAM
CENTER-LINK
CA25 ADAPTER
CENTER REEL ARM PROP HANDLE
HYDRAULIC CONNECTIONS
REEL FORE-AFT CYLINDER
TRANSPORT LIGHT
TRANSITION PAN
PICK-UP REEL FINGERS
REEL ENDSHIELDS
MacDon
D65 DRAPER
CROP DIVIDER
SICKLE DRIVE BOX
REEL LIFT CYLINDER
ENDSHIELD

5.2 COMBINE ADAPTER


AUGER
HEADER FLOAT SPRINGS
CENTER-LINK
HYDRAULIC RESERVOIR
GEARBOX
FEED DRAPER
HEADER SUPPORT ARM
HEADER FLOAT SPRINGS


COMBINE HYDRAULICS MULTI-COUPLER
RESERVOIR OIL LEVEL SIGHT GLASS
HEADER AUTO HEIGHT CONTROL
TORQUE WRENCH
DRAPER / KNIFE DRIVE PUMP
DRIVELINE
TRANSITION FRAME
HEADER FLOAT LOCK
HOSES TO HEADER

6 SPECIFICATIONS

	HEADER SIZE	20 FT	25 FT	30 FT	35 FT	40 FT	45 FT
OVERALL							
Width (Inches [mm])	Transport (Reel Full Aft) with CA25 Adapter	106 (2684) Long Dividers Installed 98 (2500) Long Dividers Removed					
	Field	255 (6479)	315 (8003)	375 (9527)	435 (11051)	495 (12575)	555 (14099)
Length (Inches [mm])	Transport (with Tow Pole)	Not Applicable		505-3/4 (12845)	547-1/2 (13907)	601-1/2 (15278)	631-1/2 (16040)
Height -Transport		97 in. (2464 mm)					
Estimated Weight Range Base Header - No Adapter (lb [kg])		3400 (1544)	3500–4100 (1589–1861)	4200–5100 (1907–2315)	4700–5700 (2134–2588)	5400–5800 (2451–2633)	6200 (2815)
CUTTERBAR							
Width (Inches (mm)		240 (6096)	300 (7620)	360 (9144)	420 (10668)	480 (12192)	540 (13716)
Header Cutting Height	Shortest Center-Link	1-5/16 in. (32 mm) below ground – 52-5/16 in. (1328 mm) above		13/16 in. (20 mm) below ground–52-13/16 in. (1340 mm) above			
	Longest Center-Link	4-5/8 in. (117 mm) below ground – 46-7/8 in. (1192 mm) above		4-1/8 in. (105 mm) below ground–47-3/8 in. (1204 mm) above			
Guard Angle (Cutterbar on Ground)		7.0°–12.4°		2.0°–7.4°			
SICKLE							
Drive Type	Single Knife (SK)	Hydraulic Motor / 'C' Belt/Heavy Duty (MD) Sickle Drive Box					
	Double Knife (DK)	Hydraulic Motor / Two 'B' Timing Belts / Two Heavy Duty (MD) Sickle Drive Boxes				Two Hydraulic Motors To 'C' Belts, Untimed To Heavy Duty (MD) Sickle Drive Boxes.	
Sickle Speed (Strokes Per Minute)	Single Knife (SK)	Not Applicable	1200–1450	1200–1400	1100–1300	1050–1200	Not Applicable
	Double Knife (DK)	1400–1700		1200–1500		1100–1400	
Stroke		3 in. (76 mm)					
Sections - Over-Serrated and Bolted (serrations/inch)	Solid	14		9 / 14		9	
Guards and Hold-Downs	Pointed	Case Hardened or Double Heat Treated / Sheet Metal / Adjuster Bolt					
	Stub	Sheet Metal HD		Not Applicable			
CONVEYOR AND DECKS							
Draper Drive		Hydraulic					
Draper Width		41-5/8 in. (1057 mm)					
Draper Speed		247–464 ft/min (75–141 m/min)					
Delivery Opening Width		73-5/8 in. (1870 mm)					
REEL							
Drive		Hydraulic From Combine Hydraulic Oil Supply					
Speed		0–67 rpm					
Quantity of Tine Tubes		9	6 / 9	5 / 6		5	
Effective Reel Diameter		65 in. (1650 mm)					
Fingers	Tip Radius Range	30-3/16–31-1/2 in. (766–800 mm)					
	Type	Steel		HD Plastic - SR Steel or Plastic - DR	HD Plastic		
	Spacing	6 in. (152 mm)					

(continued next page)

SECTION 6. SPECIFICATIONS

HEADER SIZE		**20 FT**	**25 FT**	**30 FT**	**35 FT**	**40 FT**	**45 FT**
UPPER CROSS AUGER							
Outside Diameter		12 in. (305 mm)					
Weight (lb [kg])		135 (62)	205 (93)	235 (107)	265 (120)	295 (134)	
STABILIZER WHEELS / SLOW SPEED TRANSPORT							
Size		Not Applicable		ST205/75 R15			
Pressure				Load Range E - 85 psi (586 kPa)			
COMBINE ADAPTER							
Width		151 inches (3835 mm)					
Length		70 inches (1778 mm)					
Height		50 inches (1270 mm)					
Weight		2,050 lb (930 kg)					
Main Drive		Combine Driven Piston Pump and Gear Pump Through Gearbox					
Gearbox Capacity		5 Pints (2.5 liters)					
Auger	Drive	Chain					
	Type	Auger - 14 inches (356 mm) with 4 inch (102 mm) Flighting					
	Speed	150 rpm (Combine Dependent)					
Feed Draper	Drive	Hydraulic Motor from Combine Driven Pump					
	Type	Self-Tracking Rubber Coated Polyester Fabric With Rubber Slats					
	Width	78-3/4 inches (2000 mm)					
	Speed	350–400 ft / min (107–122 meters / min)					
Reservoir Capacity		16 U.S. gal (60 liters)					
Maximum Operating Pressure		3500 psi (24132 kPa) Piston Pump, 3700 psi (25510 kPa) Gear Pump					
Filter		10 micron #151975					
Header Draper Drive Pump		1.01 in.^3 (16.5 cc) Gear Pump					
Sickle Drive Pump		1.8–2.7 in.^3 (29.5–44.2 cc) Piston Pump					
Adapter Header Flotation		7–8 inches (178–203 mm) vertical, 4 degrees rotation					
Header Angle Control		Mechanical or Hydraulic From Combine Hydraulic Oil Supply (With Solenoid Valve To Toggle To Reel Fore-aft / Header Tilt)					
Combine Requirement		Class 5 or Higher					

* See chart under Knife Speed for recommended range.

NOTES:
1. Specifications and design are subject to change without notice or obligation to revise previously sold units.
2. Weights do not include options.

7 OPERATION

7.1 OWNER/OPERATOR RESPONSIBILITIES

CAUTION

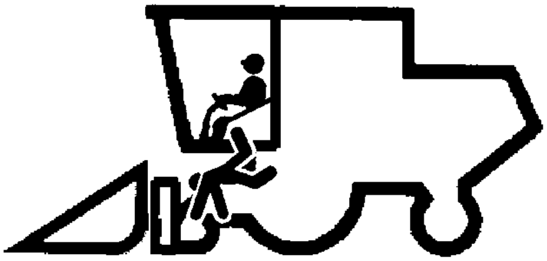
- **It is your responsibility to read and understand this manual completely before operating the header. Contact your MacDon Dealer if an instruction is not clear to you.**
- **Follow all safety messages in the manual and on safety decals on the machine.**
- **Remember that YOU are the key to safety. Good safety practices protect you and the people around you.**
- **Before allowing anyone to operate the header, for however short a time or distance, make sure they have been instructed in its safe and proper use.**
- **Review the manual and all safety related items with all Operators annually.**
- **Be alert for other Operators not using recommended procedures or not following safety precautions. Correct these mistakes immediately, before an accident occurs.**
- **Do NOT modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.**
- **The safety information given in this manual does not replace safety codes, insurance needs, or laws governing your area. Be sure your machine meets the standards set by these regulations.**

7.2 OPERATIONAL SAFETY

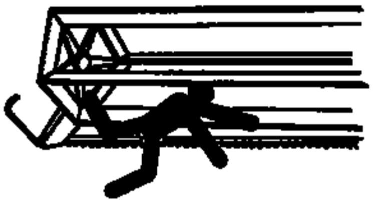
Follow these safety precautions:

CAUTION

- **Follow all safety and operational instructions given in your Operator's Manuals. If you do not have a combine manual, get one from your MacDon Dealer and read it thoroughly.**
- **Never attempt to start the engine or operate the machine except from the combine seat.**
- **Check the operation of all controls in a safe clear area before starting work.**



- **Do NOT allow riders on combine.**



- **Never start or move the machine until you are sure all bystanders have cleared the area.**
- **Avoid travelling over loose fill, rocks, ditches or holes.**
- **Drive slowly through gates and doorways.**
- **When working on inclines, travel uphill or downhill when possible. Be sure to keep transmission in gear when travelling downhill.**
- **Never attempt to get on or off a moving machine.**
- **Do NOT leave Operator’s station while the engine is running.**

(continued next page)

- **Stop engine, and remove key before adjusting or removing plugged material from the machine. A child or even a pet could engage the drive.**
- **Check for excessive vibration and unusual noises. If there is any indication of trouble, shut down and inspect the machine. Follow proper shutdown procedure. Refer to Section 7.6 SHUTDOWN PROCEDURE.**
- **Operate only in daylight or good artificial light.**

7.2.1 Header Lift Cylinder Locks

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops

7.2.2 Reel Props

WARNING

To avoid bodily injury from fall of raised reel, always engage reel props before going under raised reel for any reason.

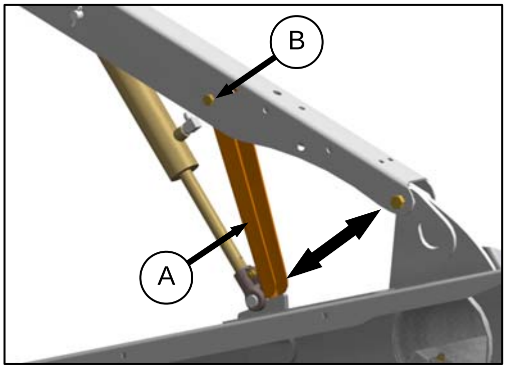
IMPORTANT

To prevent damage to reel support arms, do not transport header with reel props engaged.

Reel props are located at the reel support arms.

Engage Props:

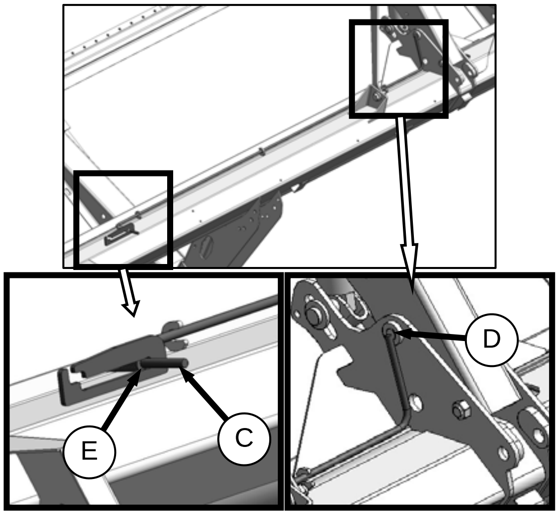
a. Raise reel to maximum height.



b. At outer arms, move props (A) to engaged position (shown).

NOTE

Keep pivot bolt (B) properly tightened so prop remains in stored position when not in use, yet can be engaged with hand force.



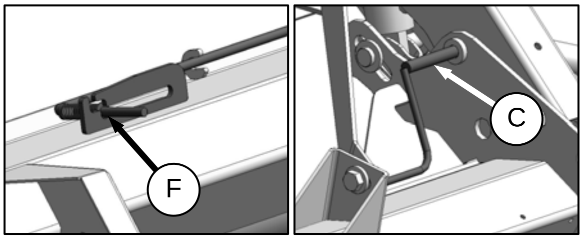
c. At center arm, use handle (C) to move lock rod to inboard position (E), engaging pin (D) into lock in arm.

d. Lower reel until props contact cylinder mounts on outer reel arms, and pin at center arm.

Disengage Props:

a. Raise reel to maximum height.

b. At outer arms, push props (A) back inside arms.

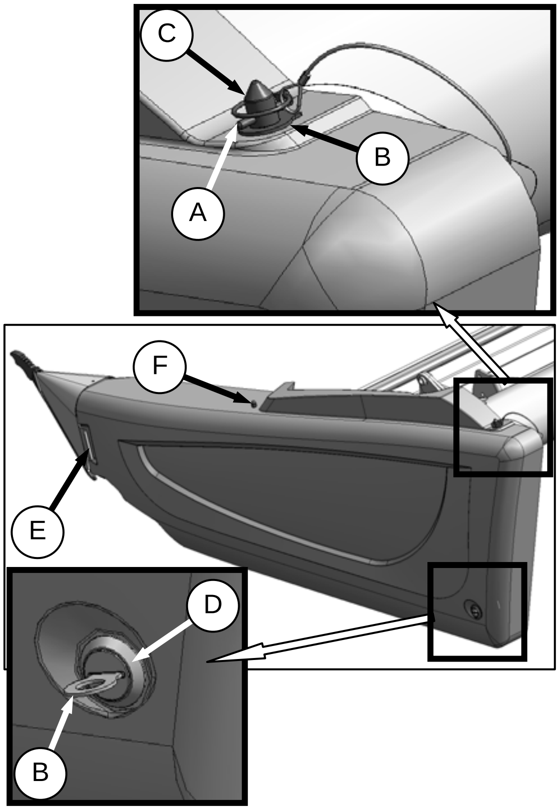


c. At center arm, use handle (C) to move lock rod to outboard position (F).

7.2.3 Endshields

Headers are fitted with a hinged polyethylene endshield on both ends of the header.

7.2.3.1 Opening



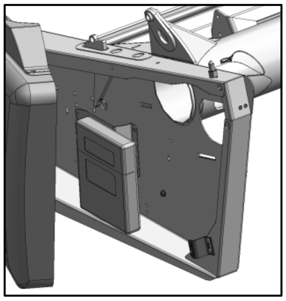
a. Remove lynch pin (A), and tool (B) from pin (C) at top rear of endshield.

b. Use tool (B) to unlock latch (D) at lower rear corner of endshield.

c. Lift shield at aft end to clear pin (C).

d. Swing shield out and away from header while maintaining forward pressure to prevent shield from slipping out of tab (E) at front of endsheet.

IMPORTANT



Shield is designed to open sufficiently for normal access to the drive system and manual case as shown.

NOTE

If more access is required to front of drives area, carefully disengage front of shield from tab (E), and swing front of shield away from header.

IMPORTANT

Do NOT force shield once it has reached its end of travel as damage to the shield structure can occur.

NOTE

If complete access to the endsheet area is required, the shield can be removed. See Section 7.2.3.3 Removing (below).

7.2.3.2 Closing

a. Maintain forward pressure and swing rear of shield towards header.

b. Lift shield, and engage pin (C) on top of frame endsheet.

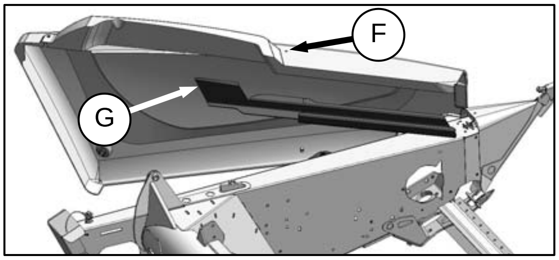
c. Push in shield to engage lower latch (D).

d. Use tool (B) to lock lower latch (D).

e. Replace tool (B) and lynch pin (A) on top pin (C).

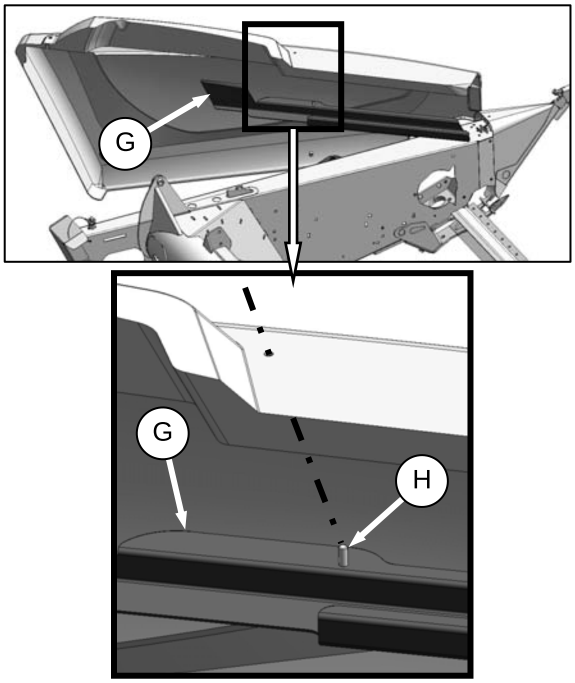
7.2.3.3 Removing

a. Open endshield. See Section 7.2.3.1 Opening (in previous column).

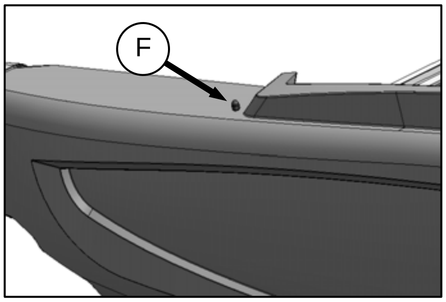


b. Remove acorn nut (F), and lift endshield off support (G).

7.2.3.4 Installing



a. Position endshield on endshield support (G), and locate hole on the stud (H).



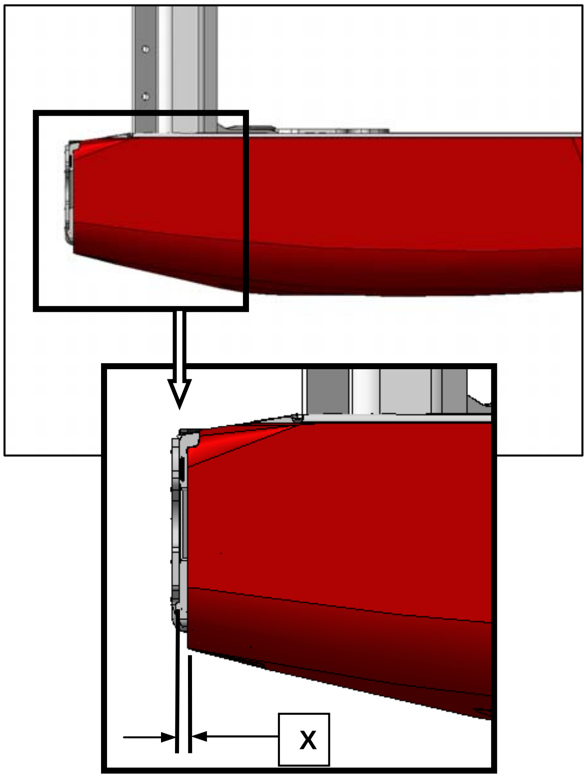
b. Secure endshield with acorn nut (F).

c. Close endshield. See Section 7.2.3.2 Closing (on previous page).

NOTE

Plastic endshields are subject to expansion or contraction depending on large temperature variations. Top pin and lower latch bracket positions can be adjusted to compensate for dimensional changes. Refer to next section.

7.2.3.5 Adjustment



a. Check gap **'X'** between the front end of shield and header frame, and compare to chart below.

TEMPERATURE Degrees ˚F (˚C)	GAP 'X' Inches (mm)
25 (-4)	1-1/8 (28)
45 (7)	1 (24)
65 (18)	13/16 (20)
85 (29)	5/8 (16)
105 (41)	1/2 (12)
125 (52)	5/16 (8)
145 (63)	3/16 (4)
165 (89)	0

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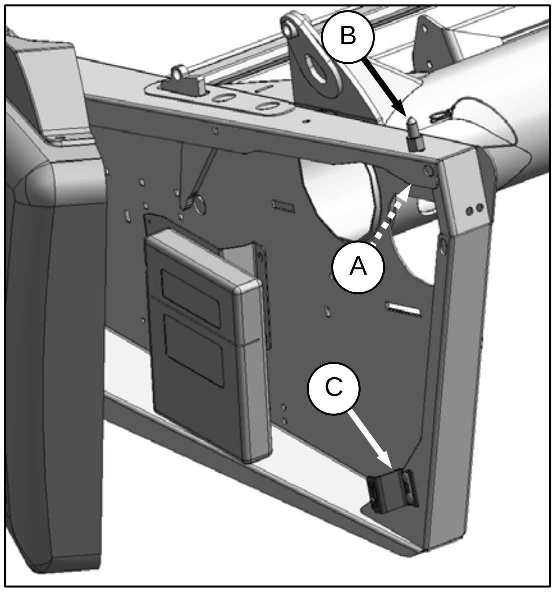
b. If adjustments are required, proceed as follows:
   1. Open endshield. See Section 7.2.3.1 Opening.



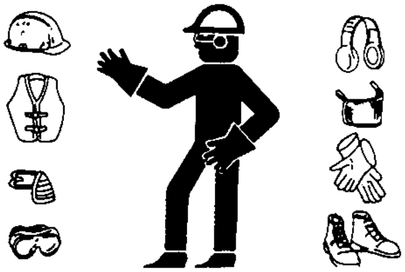
   2. From inside endsheet, loosen nut (A) on pin (B) with a 3/4 inch socket.
   3. Close endshield, and adjust position to achieve the gap **'X'** between the front end of shield and header frame. (on previous page).
   4. Open endshield, and tighten nut (A).
   5. To achieve a snug fit between top of shield and header frame, and to ensure that endshield is fully engaged on pin (B), loosen bolts on catch (C), and adjust catch as required to re-position shield.
   6. Tighten bolts on catch (C).
   7. Close endshield.

7.2.4 Daily Start-Up Check

Do the following each day before start-up:

CAUTION

- **Clear the area of other persons, pets etc. Keep children away from machinery. Walk around the machine to be sure no one is under, on, or close to it.**
- **Wear close fitting clothing and protective shoes with slip resistant soles.**
- **Remove foreign objects from the machine and surrounding area.**
- **As well, carry with you any protective clothing and personal safety devices that COULD be necessary through the day. Don't take chances.**
- **You may need:**



  - o **a hard hat**
  - o **protective glasses or goggles**
  - o **heavy gloves**
  - o **respirator or filter mask**
  - o **wet weather gear**

  - o **Protect against noise. Wear a suitable hearing protective device such as ear muffs or ear plugs to protect against objectionable or uncomfortable loud noises.**

a. Check the machine for leaks or any parts that are missing, broken, or not working correctly.

NOTE:

Use proper procedure when searching for pressurized fluid leaks. Refer to Section 8.5 HYDRAULICS.

b. Clean all lights and reflective surfaces on the machine.

c. Perform all Daily maintenance. Refer to Section 8.4.1 Maintenance Schedule/Record.

7.3 HEADER ATTACHMENT / DETACHMENT

The header/adapter is configured to each particular model of combine at the factory. These combines are:

COMBINE	SECTION
Case IH 7010, 8010, 7120, 8120, 5088, 6088, 7088	7.3.2
John Deere 60, 70 and S Series	7.3.3
CAT Lexion 500, 700 (R Series)	7.3.4
New Holland CR, CX	7.3.5
AGCO Gleaner R, S Series Challenger 660, 670, 680B Massey 9690, 9790, 9895	7.3.6

This section includes instructions on setting up, attaching, and detaching the header to the combines listed above.

IMPORTANT

Ensure applicable functions (AHHC, Draper Header Option, Hydraulic Center-Link Option, Hydraulic Reel Drive, etc.) are enabled on the combine and in the combine computer. Failure to do so may result in improper header operation.

7.3.1 Adapter Set-up

The following sections outline recommended adapter set-up guidelines, depending on your combine and crop.

The recommendations cannot cover all conditions.

If feeding problems develop with adapter operation. For detailed information, refer to Section 9 TROUBLESHOOTING.

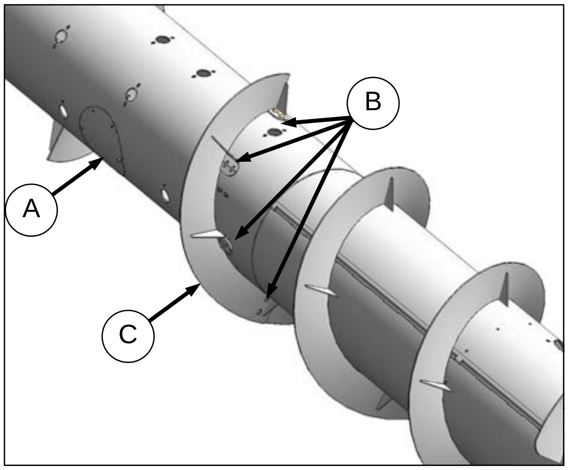
7.3.1.1 Flighting Extensions

Flighting extension kits may have been supplied with your header to improve feeding in certain crops such as rice. Installation instructions are included with the kits.

They are not recommended in cereal crops.

APPLICABLE COMBINES: All except New Holland CR960, 9060, 970, 9070, and 9080.

If necessary, remove auger flighting extensions as follows:



a. Remove access cover (A).
b. Remove eight bolts (B), washers, and nuts that secure flighting extension (C) to auger and remove extension.
c. Repeat for other flighting extension.
d. Re-install access cover (A).

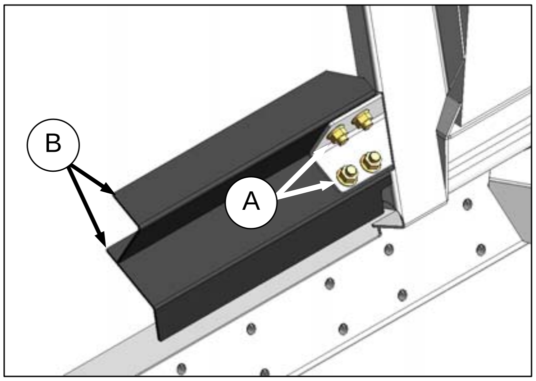
7.3.1.2 Stripper Bars

Stripper bar kits may have been supplied with your header to improve feeding in certain crops such as rice. Installation instructions are included with the kits.

They are not recommended in cereal crops.

APPLICABLE COMBINES: All except New Holland CR960, 9060, 970, 9070, and 9080.

If necessary, remove auger stripper bars as follows:



a. Remove four bolts (A) and nuts securing bars (B) to adapter frame and remove bars.

b. Repeat for opposite set of stripper bars.

7.3.1.3 Auger Drive

The adapter auger is chain driven from a sprocket that is mounted on the input shaft from the combine, and which is enclosed in the drive gearbox.

The speed is determined by the combine input shaft, and is matched to each particular combine, so no adjustment is necessary.

However, optional drive sprockets are available to change the auger speed to optimize auger performance. See your MacDon Dealer.

NOTE

For special conditions, 20T, 22T, and 26T sprockets are available to change adapter feed auger speed. Consult with your MacDon Dealer.

7.3.1.4 CR Feeder Deflectors

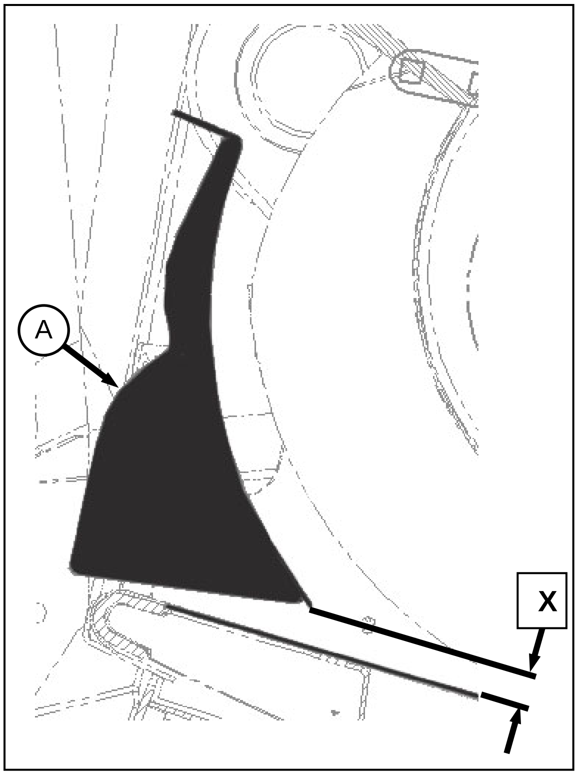
For New Holland CR 960, 9070, and 9080 combines, feeder kits have been installed on the adapter at the factory to improve feeding into the feeder house.

They may also have been installed as an option on older machines. If necessary, they can be removed.

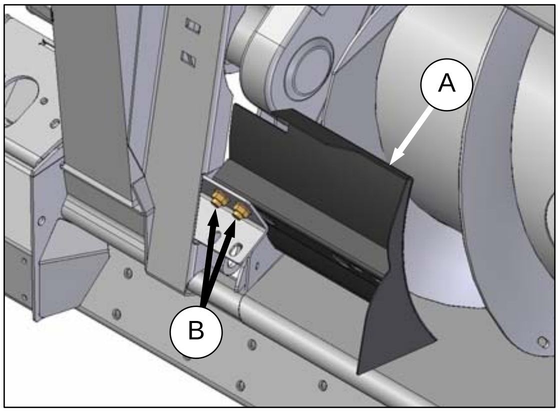
CA25 adapters for the CR Models listed have short feeder kits installed at the factory. Long feeder kits are provided for narrow feeder house combines, and are dealer-installed to replace the short feeder kits.

COMBINE MODEL	FEEDER HOUSE SIZE	FEEDER KIT SIZE
CR970, 9070, 9080	Wide	Short: 7-7/8 in. (200 mm)
CR960, 9060, 940, 9040	Narrow	Long: 12-13/16 in. (325 mm)

If required, replace the feeder deflectors as follows:



a. Determine position of existing deflector (A) by measuring gap **‘X’** between deflector forward edge and pan.



LH SHOWN - RH OPPOSITE

b. Remove two bolts (B), and nuts securing deflector (A) to adapter frame and remove deflector.

c. Position replacement deflector, and secure with bolts (B) and nuts. Maintain dimension **’X’** from existing deflector for replacement deflector.

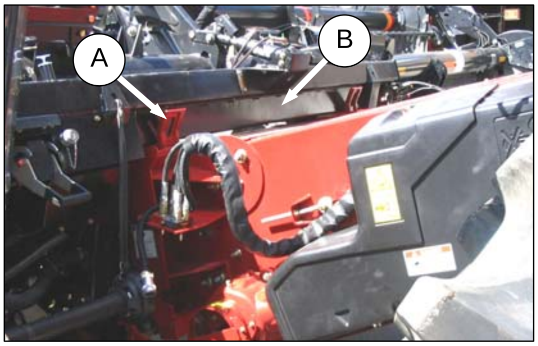
d. Repeat for opposite deflector.

e. After attaching header to combine, extend center-link fully, and check gap **’X’** between deflector and pan.

f. Maintain 7/8 +/- 1/8 in. (22 +/- 3 mm).

7.3.2 Case IH 7010, 8010, 7120, 8120, 5088, 6088, 7088

7.3.2.1 Attachment

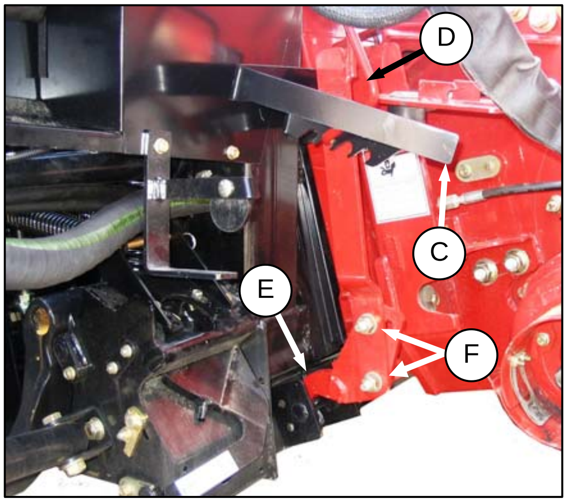


a. Slowly drive combine up to adapter until feeder house saddle (A) is directly under the adapter top cross member (B).

b. Raise feeder house slightly to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

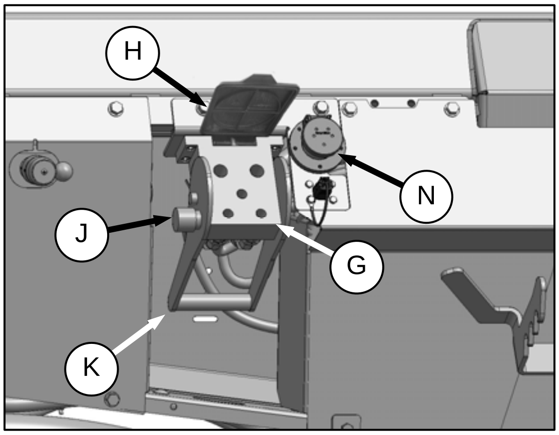


c. Lift lever (C) on adapter at left side of feeder house, and push handle (D) on combine to engage locks (E) on both sides of the feeder house.

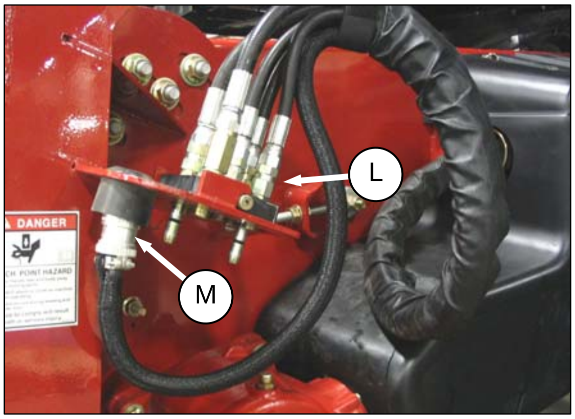
d. Push down on lever (C) so that slot in lever engages handle to lock handle in place.

e. If lock (E) does not fully engage pin on adapter when (C) and (D) are engaged, loosen bolts (F), and adjust lock as required. Re-tighten bolts.

f. Connect combine hydraulic quick coupler to receptacle (G) on adapter as follows:



1. Open cover (H).
2. Push in lock button (J), and pull handle (K) to full open position.



3. Remove coupler (L) from combine, and clean mating surfaces.

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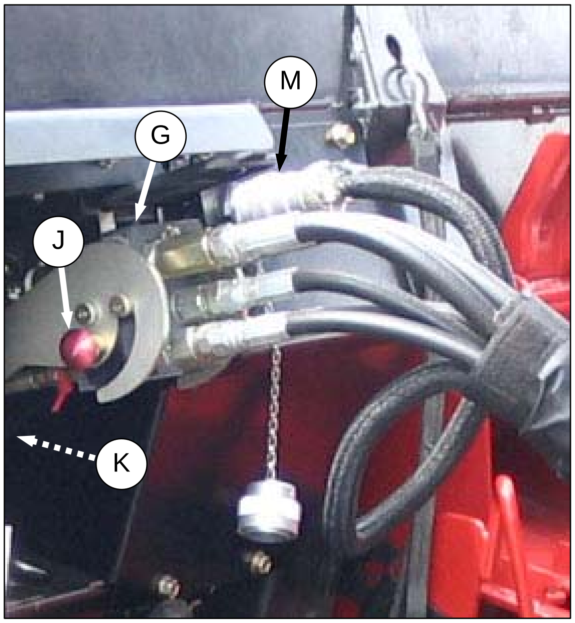
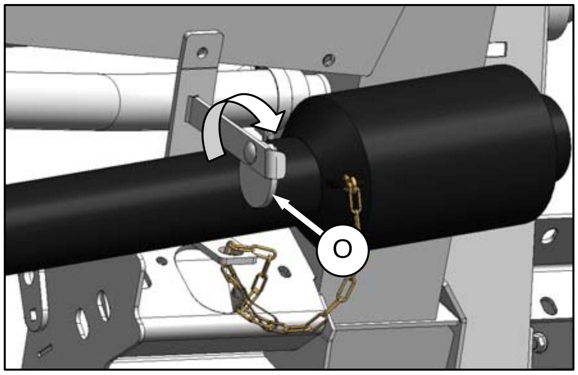


4. Position onto adapter receptacle (G), and push handle (K) to engage coupler pins into receptacle.
5. Push handle to closed position until lock button (J) snaps out.

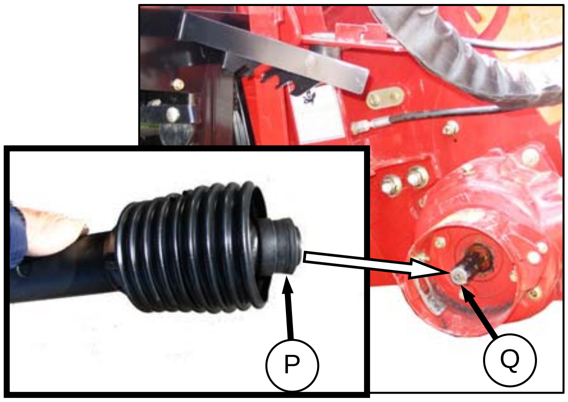
g. Remove cover on adapter electrical receptacle (N).

h. Remove electrical connector (M) from storage cup on combine, and route to adapter receptacle.

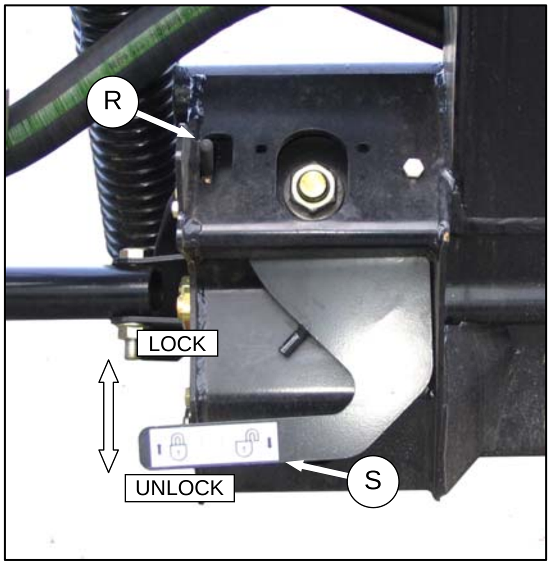
i. Align lugs on connector with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.



j. Rotate disc (O) on adapter driveline storage hook, and remove driveline from hook.



k. Pull back collar (P) on end of driveline, and push onto combine output shaft (Q) until collar locks.



l. Disengage both adapter float locks by moving latch (R) away from adapter, and moving lever (S) at each lock to lowest position.

7.3.2.2 Detachment

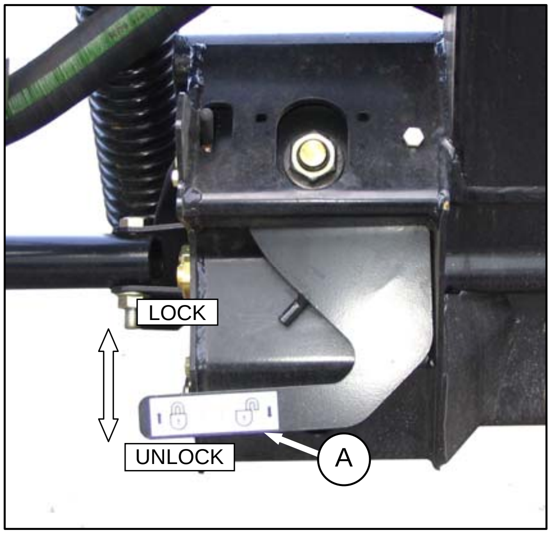
a. Choose a level area. Position header slightly above ground. Stop engine, and remove key.

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



b. Engage both adapter float locks by lifting lever (A) at each lock until it latches into lock position.

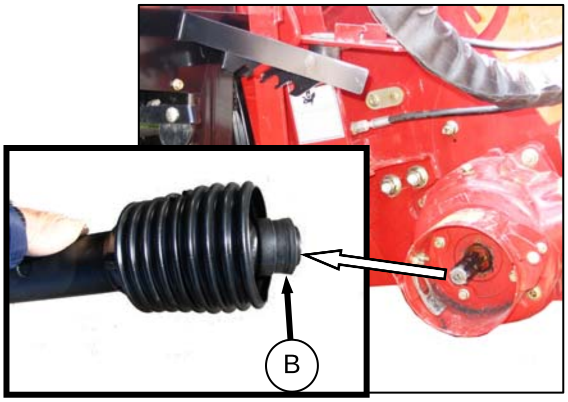
IMPORTANT

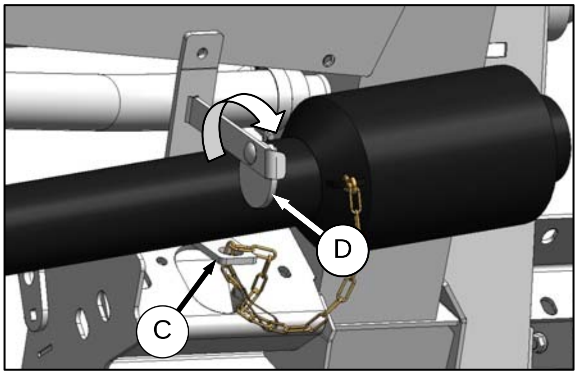
If slow speed transport wheels are installed, header may be detached in either Transport or Field mode.

If detaching with wheel in Field mode, set wheels to storage or uppermost working position. Refer to Section 7.9.1 Cutting Height.

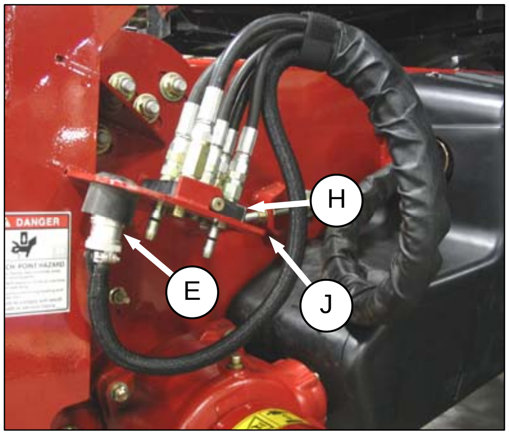
IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.





c. Disconnect driveshaft (B) from combine, and slide driveshaft in hook (C) so that disc (D) drops to secure driveshaft.



d. Remove electrical connector (E), and replace cover.

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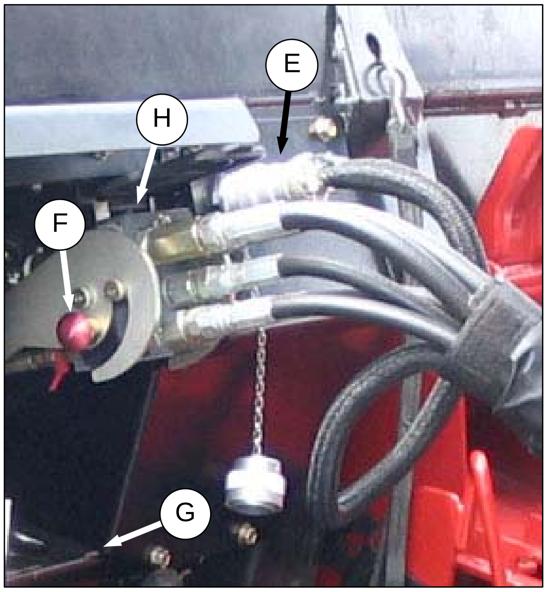
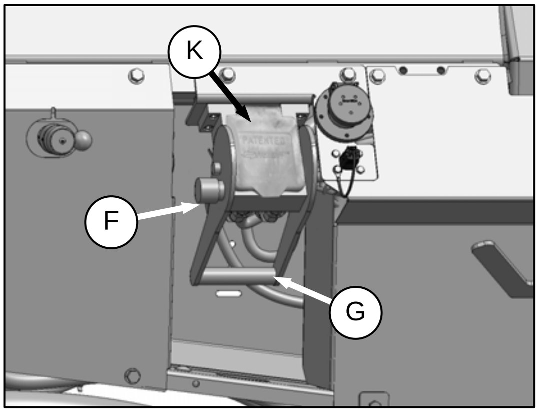
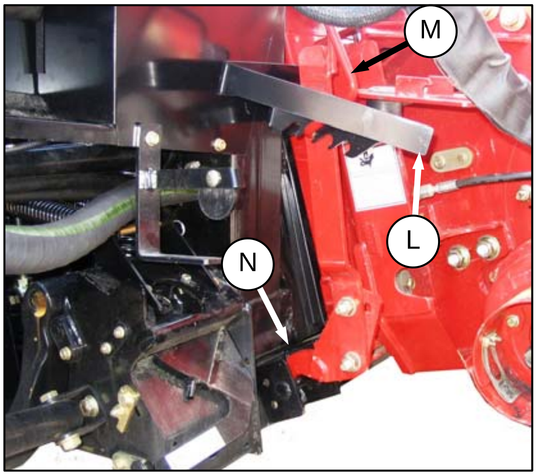


e. Push in lock button (F), and pull handle (G) to release coupler (H). Position coupler (H) onto storage plate (J) on combine.

f. Place electrical connector (E) in storage cup on plate on combine (J).



g. Push handle (G) to closed position until lock button (F) snaps out. Close cover (K).



h. Lift lever (L), pull and lower handle (M) to disengage feeder house/adapter lock (N).

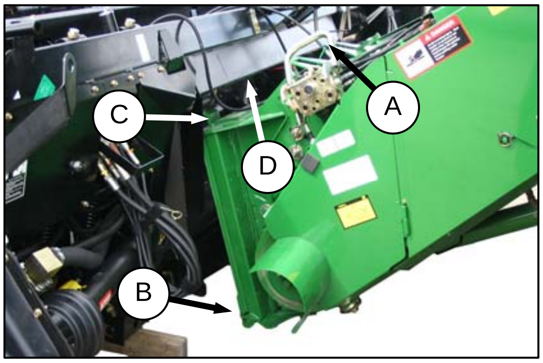
i. Lower feeder house until it disengages adapter support.

j. Slowly back combine away from adapter.

7.3.3 John Deere 60, 70, and S Series

Contour Master, Level Land

7.3.3.1 Attachment



a. Push handle (A) on combine coupler toward feeder house to retract pins (B) at bottom corners of feeder house.

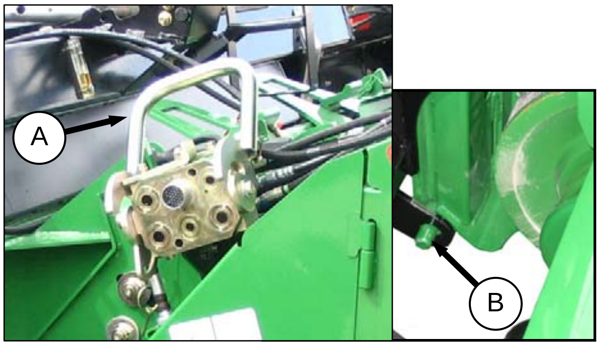
b. Slowly drive combine up to adapter until feeder house saddle (C) is directly under the adapter top cross member (D).

c. Raise feeder house to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.

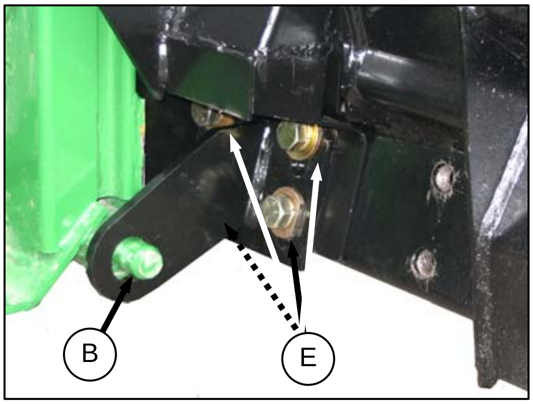
d. Raise or lower header until slightly off the ground.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



e. Pull handle (A) to engage pins (B) in adapter.

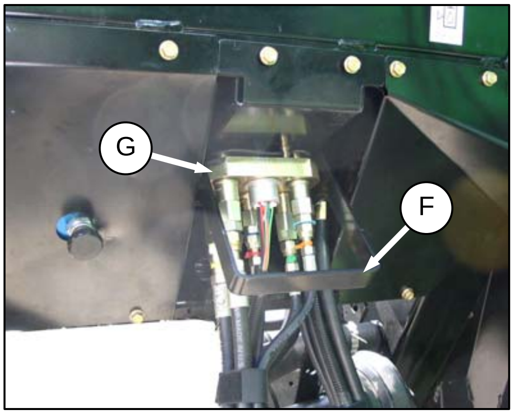


f. Check that bolts (E) on adapter brackets are tight.

g. If pins (B) do not fully engage adapter brackets, loosen bolts (E), and adjust bracket as required. Re-tighten bolts.

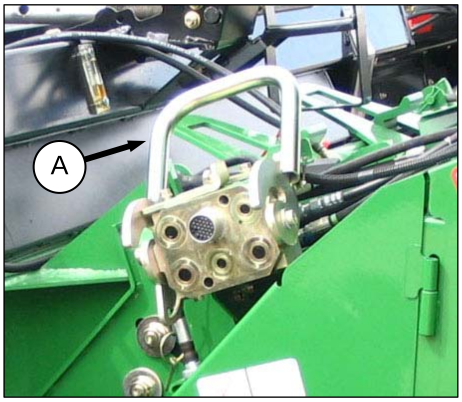
h. Remove blocks from under cutterbar.

i. Start engine, and lower header.



j. Pull handle (F) on adapter to release coupler (G) from storage position. Remove coupler, and push handle back into adapter to store.

k. Attach coupler (G) to combine as follows:



1. Handle (A) should be in the nearly-up position. Clean receptacle.

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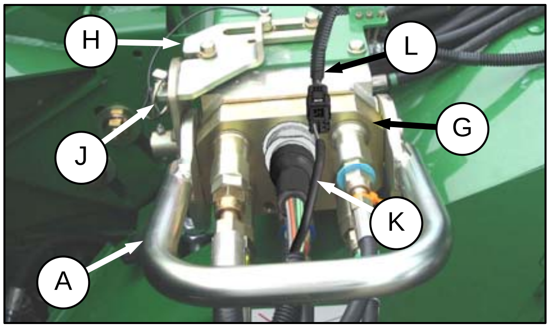
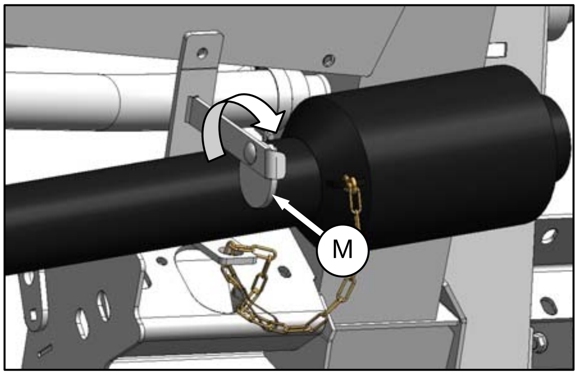
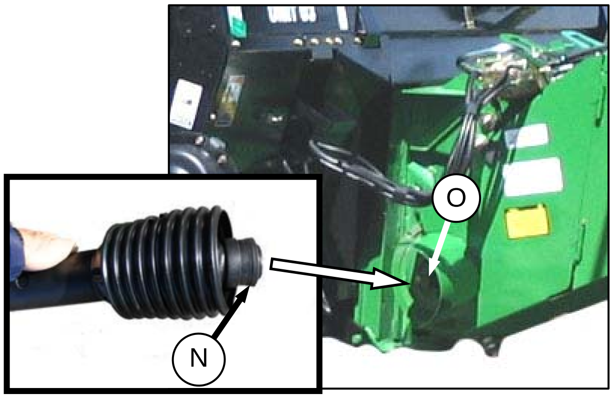


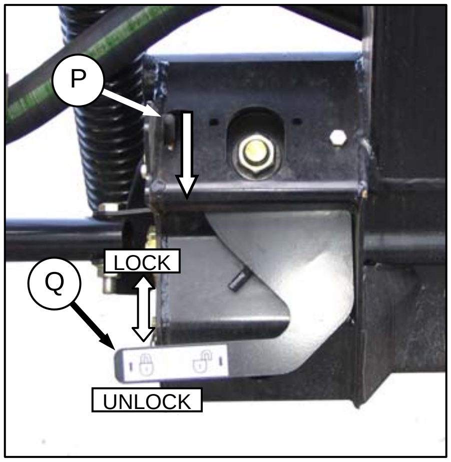
2. Locate coupler (G) onto receptacle, and pull handle (A) so that lugs on coupler are engaged into handle.
3. Pull handle to full horizontal position as shown.
4. Slide latch (H) to lock handle in position, and secure with lynch pin (J).
5. If adapter is equipped with reel fore-aft / header tilt selector, connect harness (K) to combine connector (L).



l. Rotate disc (M) on adapter driveline storage hook, and remove driveline from hook.



m. Pull back collar (N) on end of driveline, and push onto combine output shaft (O) until collar locks.



n. Disengage both adapter float locks by moving latch (P) away from adapter, and moving lever (Q) at each lock to lowest position.

7.3.3.2 Detachment

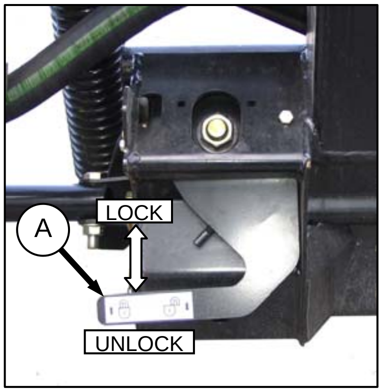
a. Choose a level area. Position header slightly above ground. Stop engine, and remove key.

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



b. Engage both adapter float locks by lifting lever (A) at each lock until it latches into the lock position.

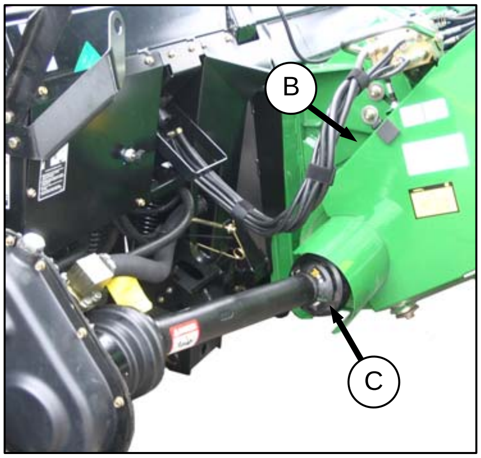
IMPORTANT

If slow speed transport wheels are installed, header may be detached in either Transport or Field mode.

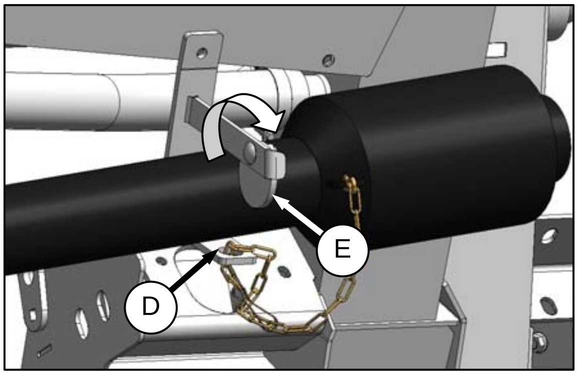
If detaching with wheel in Field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.

IMPORTANT

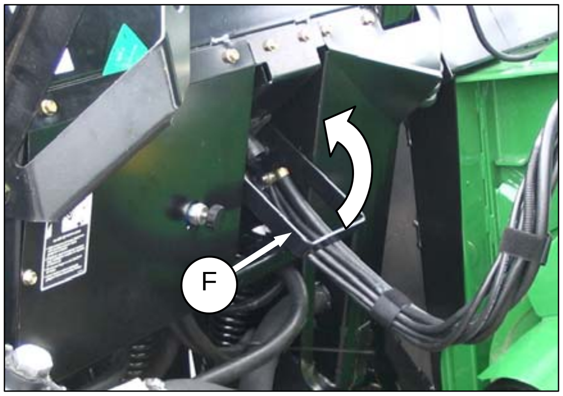
If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.



c. Open shield (B) on combine. Pull back collar on driveline, and pull driveline (C) off combine output shaft.



d. Slide driveline in hook (D) so that disc (E) drops to secure driveline.



e. Lift handle (F) on adapter.

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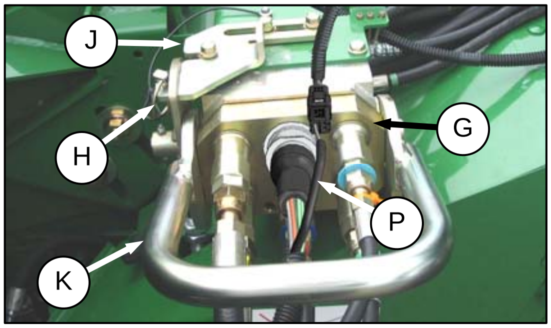
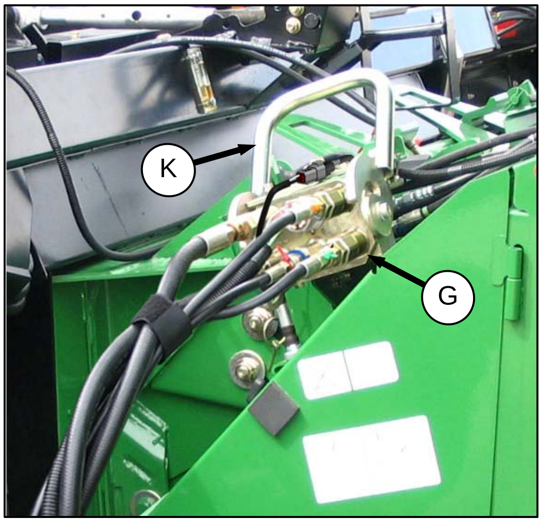
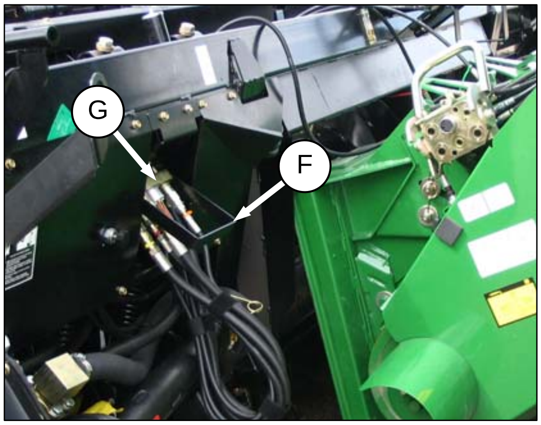
f. Disconnect hydraulic/electrical coupler from combine as follows:



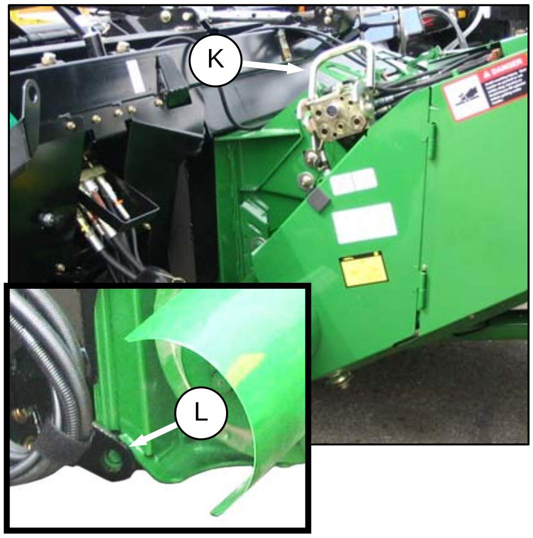
1. Disconnect harness (P) from combine harness.
2. Remove lynch pin (H), and slide lock (J) to release handle (K).



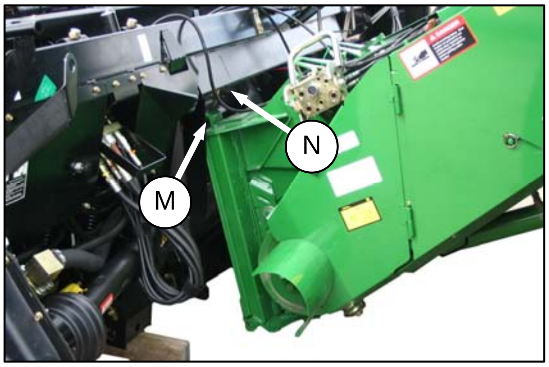
3. Lift handle (K) to full vertical position to release coupler (G) from combine.



4. Position coupler (G) on adapter receptacle, and lower handle (F) to lock coupler.



5. Push handle (K) on combine toward feeder house to disengage feeder house pin (L) from adapter.

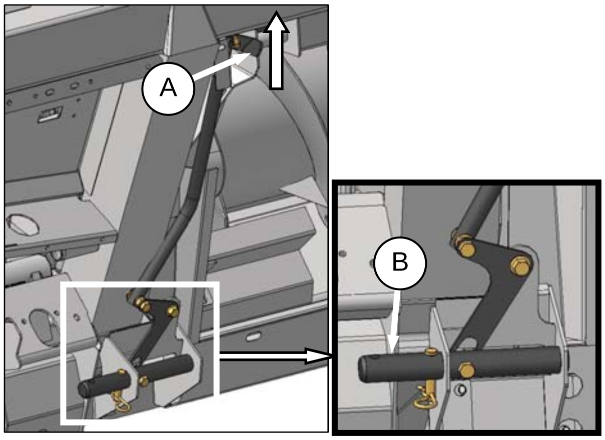


g. Lower feeder house until saddle (M) disengages and clears adapter support (N).

h. Slowly back combine away from adapter.

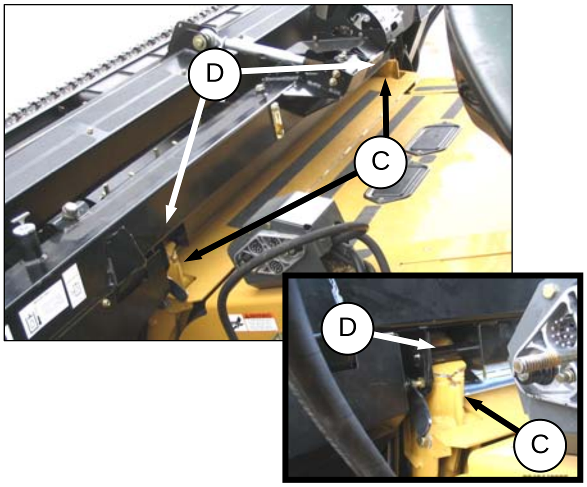
7.3.4 CAT Lexion 500, 700 Series

7.3.4.1 Attachment



a. Handle (A) on the CA25 adapter should be in raised position, and pins (B) at bottom corners of adapter retracted.

b. Slowly drive combine up to adapter until feeder house is directly under the adapter top cross member.

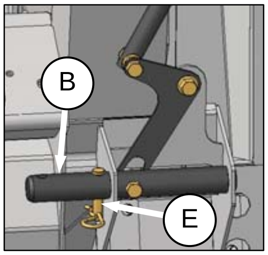


c. Raise feeder house to lift adapter, ensuring feeder house posts (C) are properly engaged in adapter frame (D).

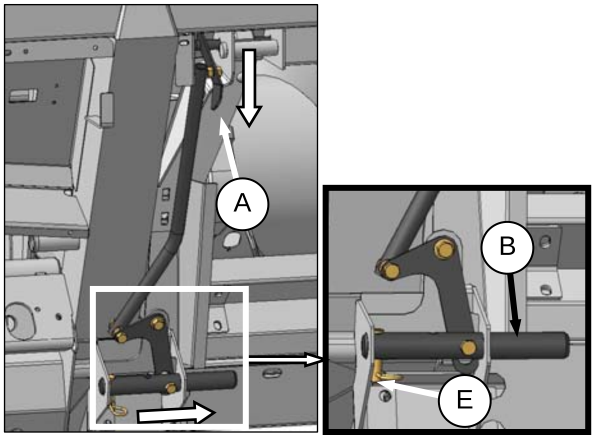
d. Position header slightly off the ground.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



e. Remove locking pin (E) from adapter pin (B).



f. Lower handle (A) to engage adapter pins (B) into feeder house. Re-insert locking pin (E), and secure with hairpin.

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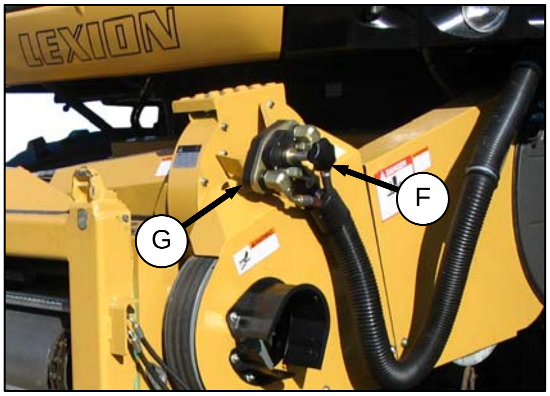
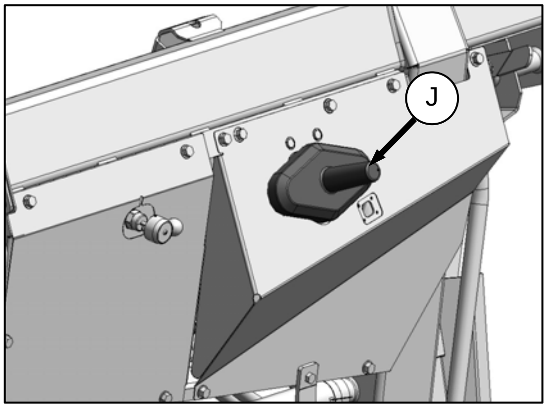
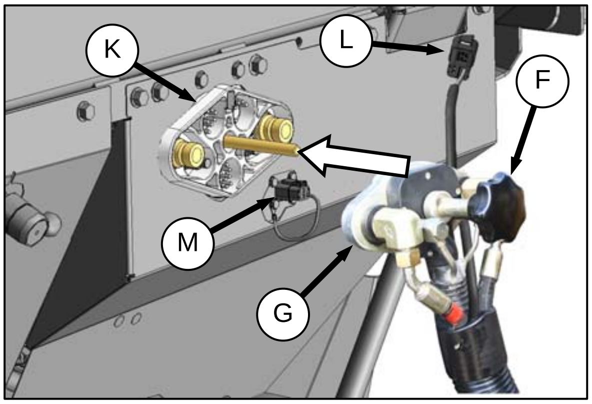
g. Connect hydraulic hoses as follows:



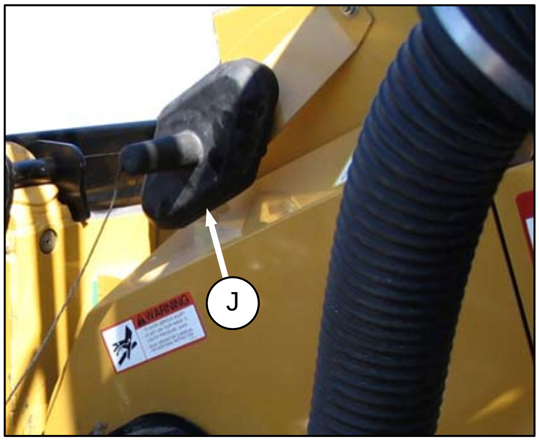
1. Unscrew knob (F) on combine coupler (G) to release coupler from combine receptacle.



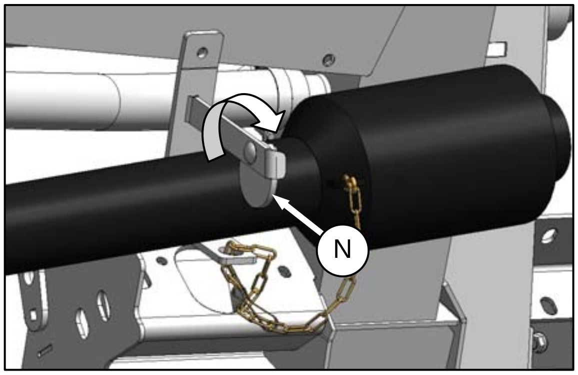
2. Remove cover (J) from adapter receptacle.



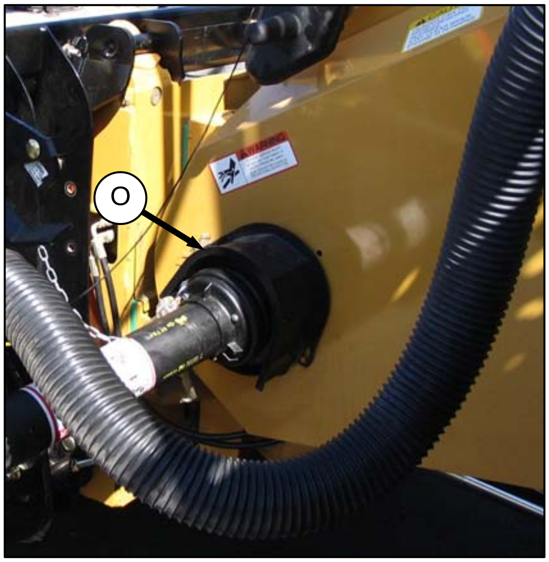
3. Clean mating surface of coupler (G), and locate onto adapter receptacle (K).
4. Turn knob (F) to secure coupler to receptacle.
5. Connect combine harness (L) to reel fore-aft/header tilt selector receptacle (M).



h. Place cover (J) on combine receptacle.



i. Rotate disc (N) on adapter driveline storage hook, and remove driveline from hook.



j. Attach driveline to combine output shaft (O).

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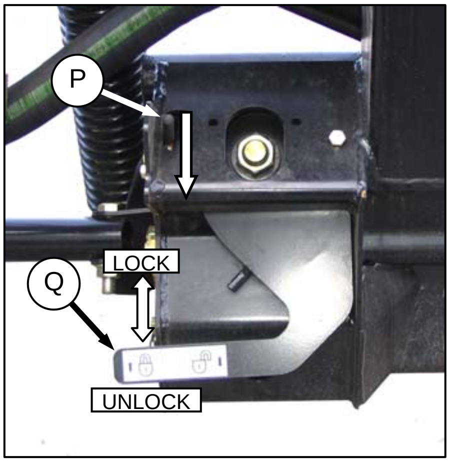


k. Disengage both adapter float locks by moving latch (P) away from adapter, and moving lever (Q) at each lock to lowest position.

7.3.4.2 Detachment

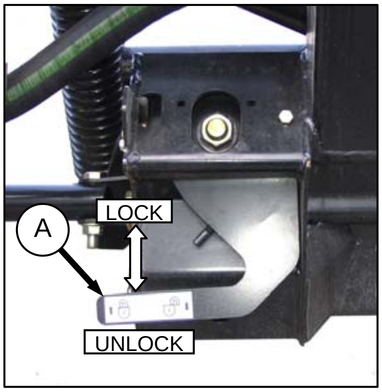
a. Choose a level area. Position header slightly off the ground. Stop engine, and remove key.

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



b. Engage the adapter float locks by lifting lever (A) at both locks until it latches into the lock position.

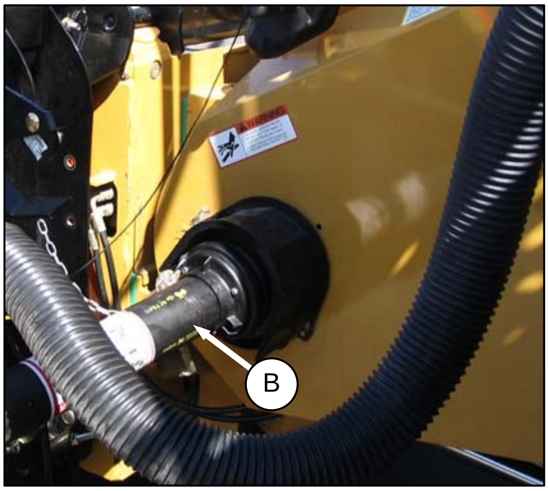
IMPORTANT

If slow speed transport wheels are installed, header may be detached in either Transport or Field mode.

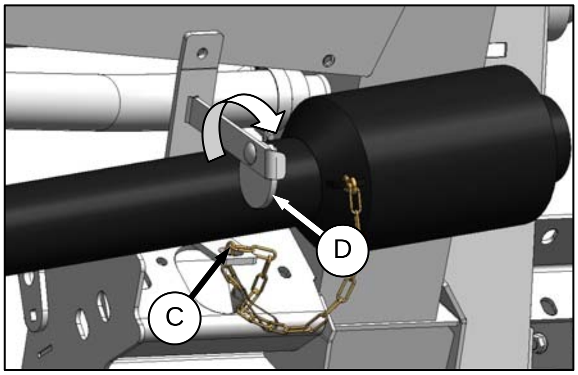
If detaching with wheel in Field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.

IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.



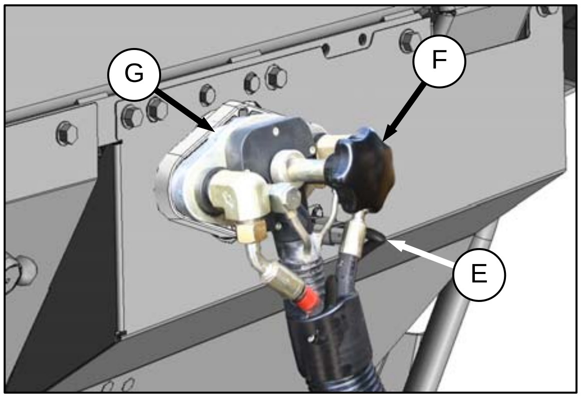
c. Disconnect driveline (B) from combine.



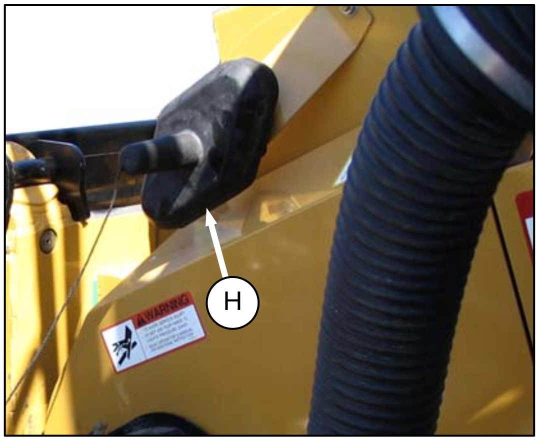
d. Slide driveline in hook (C) so that disc (D) drops to secure driveline.

(continued next page)

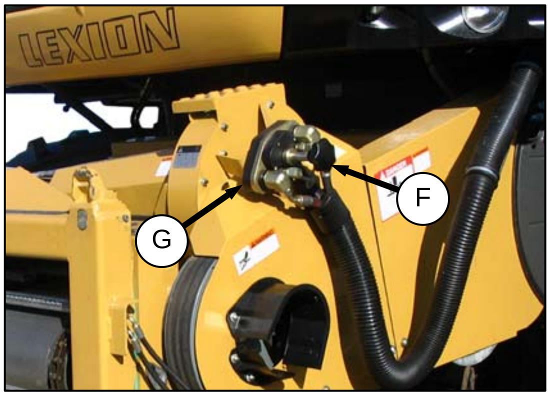
e. Disconnect hydraulics/electrical from adapter as follows:



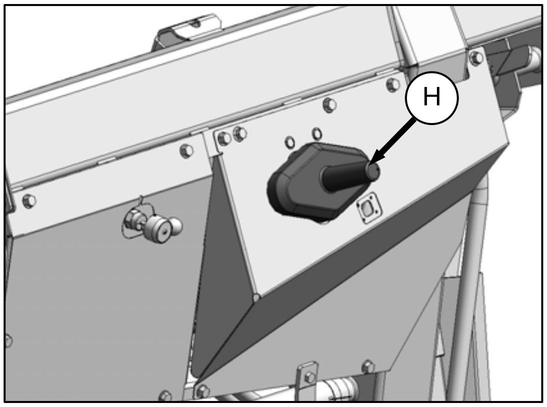
1. Unplug electrical connector (E) from adapter receptacle.
2. Unscrew knob (F) on coupler (G) to release coupler from adapter.



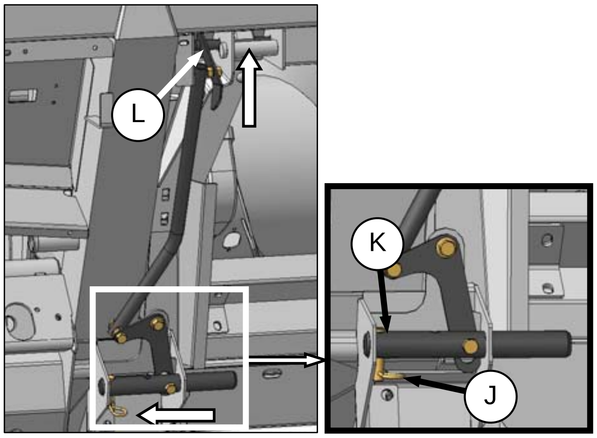
3. Remove cover (H) from combine receptacle.



4. Locate coupler (G) onto combine receptacle, and turn knob (F) to secure coupler to receptacle.

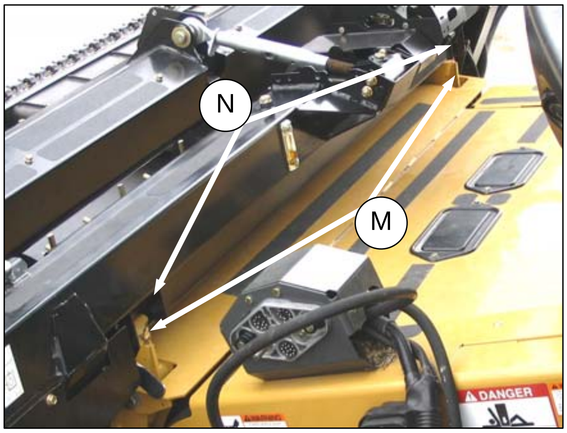


5. Place cover (H) on adapter receptacle.



f. Remove locking pin (J) from adapter pin (K).

g. Raise handle (L) to disengage adapter pins (K) from feeder house. Replace locking pin (J) in adapter pin, and secure with hairpin.

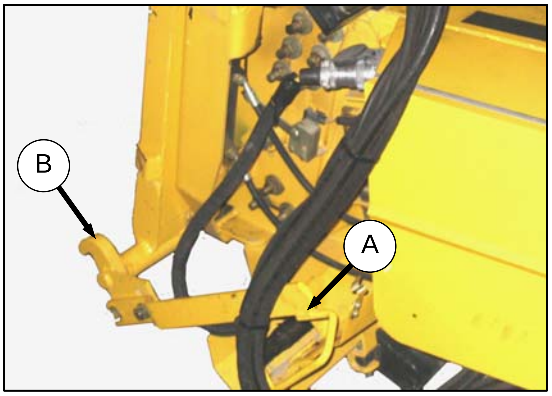


h. Lower feeder house to ground until feeder house posts (M) disengage adapter (N).

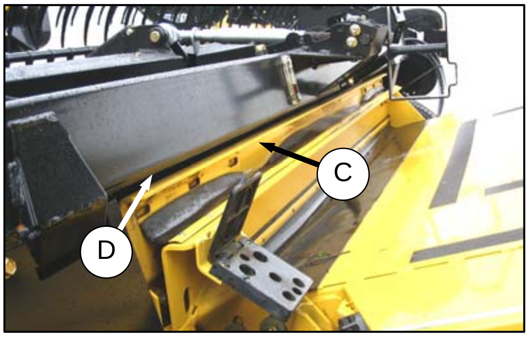
i. Slowly back combine away from adapter.

7.3.5 New Holland CR, CX

7.3.5.1 Attachment



a. Ensure handle (A) is positioned so that hooks (B) can engage adapter.

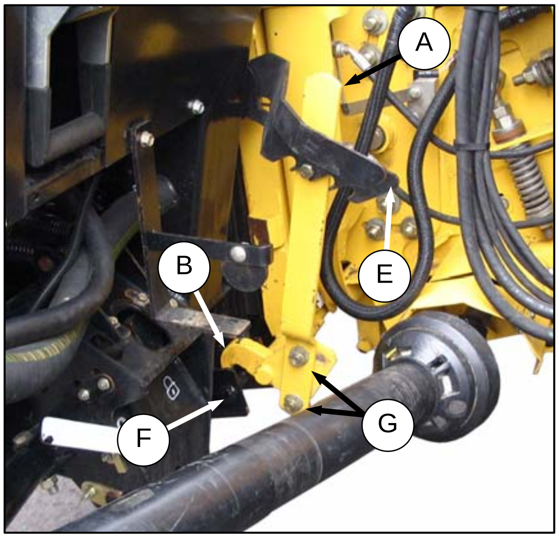


b. Slowly drive combine up to adapter until feeder house saddle (C) is directly under the adapter top cross member (D).

c. Raise feeder house to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.

CAUTION

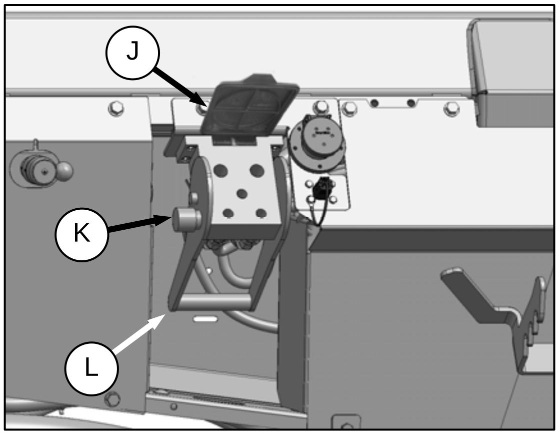
Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



d. Lift lever (E) on adapter at left side of feeder house, and push handle (A) on combine so that hooks (B) engage pins (F) on both sides of the feeder house.

e. Push down on lever (E) so that slot in lever engages handle to lock handle in place.

f. If hook (B) does not fully engage pin on adapter when (A) and (E) are engaged, loosen bolts (G), and adjust lock as required. Re-tighten bolts.



g. Open cover (J).

h. Push in lock button (K), and pull handle (L) halfway up to open position.

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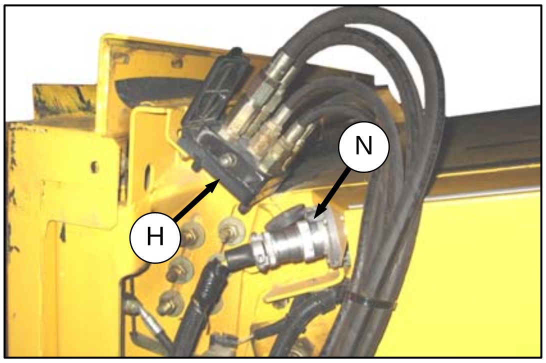
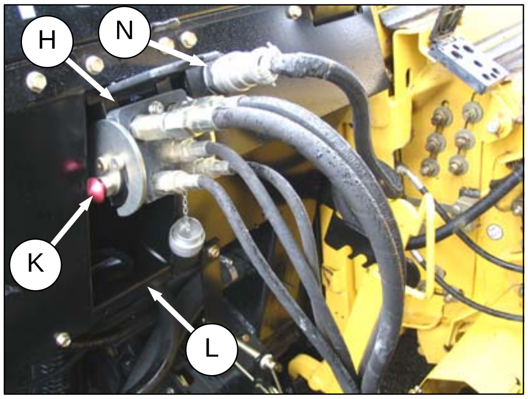


i. Remove hydraulic quick coupler (H) from storage plate on combine, and clean mating surface of coupler.



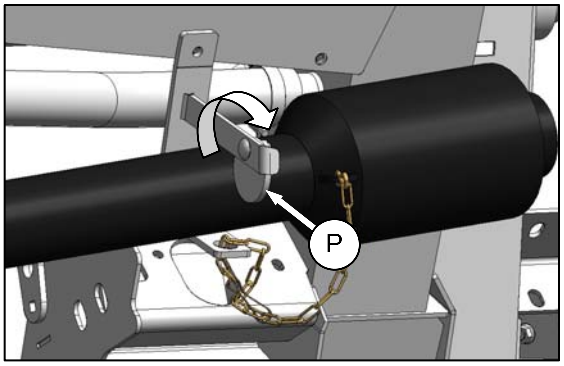
j. Position coupler (H) onto adapter receptacle, and push handle (L) to engage pins into receptacle.

k. Push handle (L) to closed position until lock button (K) snaps out.

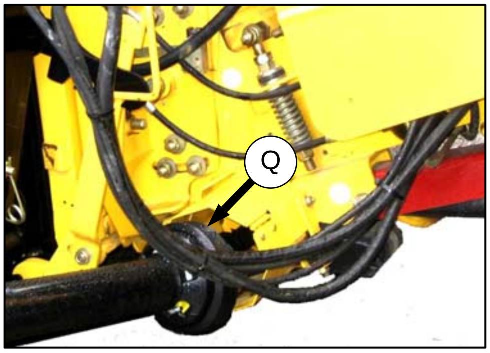
l. Remove cover on adapter electrical receptacle.

m. Remove connector (N) from combine.

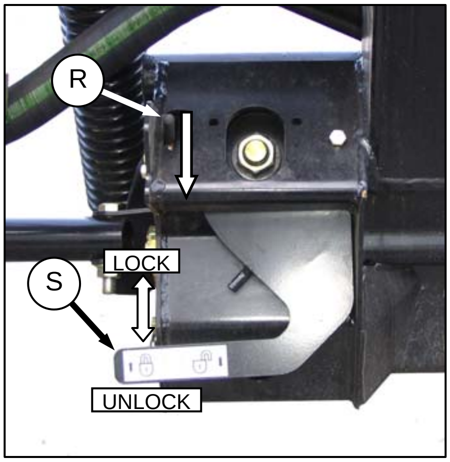
n. Align lugs on connector (N) with slots in adapter receptacle, and push connector onto receptacle. Turn collar on connector to lock it in place.



o. Rotate disc (P) on adapter driveline storage hook, and remove driveline from hook.



p. Pull back collar on end of driveline, and push onto combine output shaft (Q) until collar locks.



q. Disengage both adapter float locks by moving latch (R) away from adapter, and moving lever (S) at each lock to lowest position.

7.3.5.2 Detachment

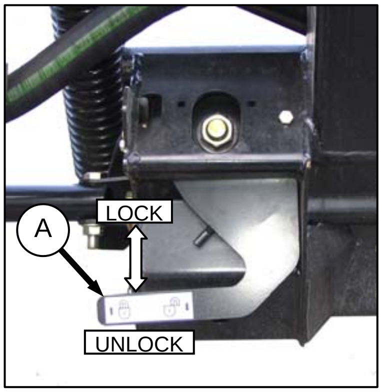
a. Choose a level area. Position header slightly off the ground. Stop engine, and remove key.

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



b. Engage the adapter float locks by lifting lever (A) at each lock until it latches into the lock position.

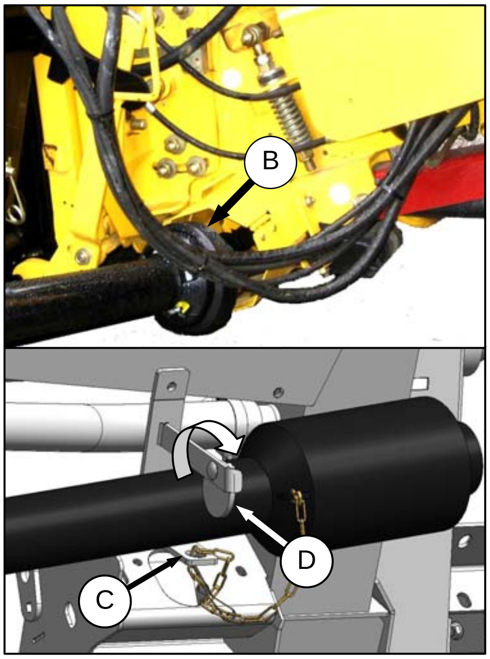
IMPORTANT

If slow speed transport wheels are installed, header may be detached in either Transport or Field mode.

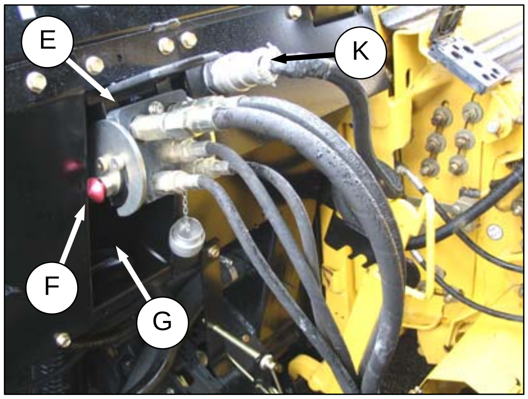
If detaching with wheel in Field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.

IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.



c. Disconnect driveshaft (B) from combine, and slide driveshaft in hook (C) so that disc (D) drops to secure driveshaft.



d. Remove hydraulic quick coupler (E) from receptacle on adapter as follows:

1. Push in lock button (F), and pull handle (G) to release coupler (E).

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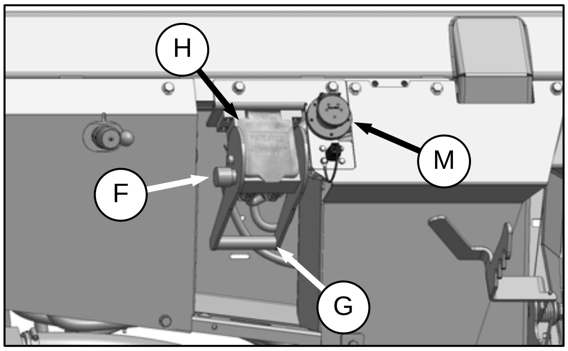
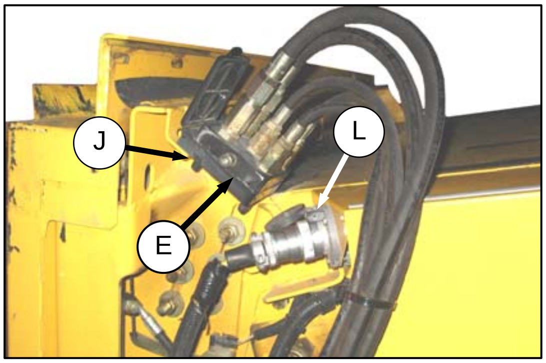
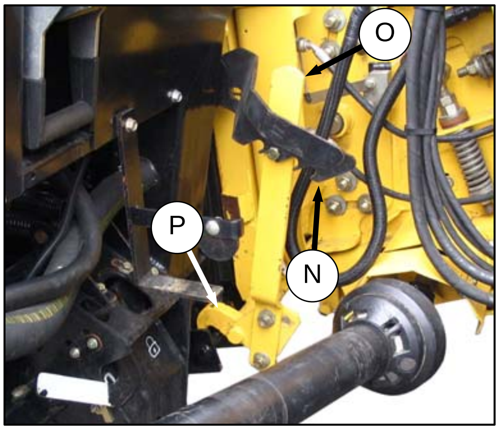


2. Push handle (G) to closed position until lock button (F) snaps out. Close cover (H).

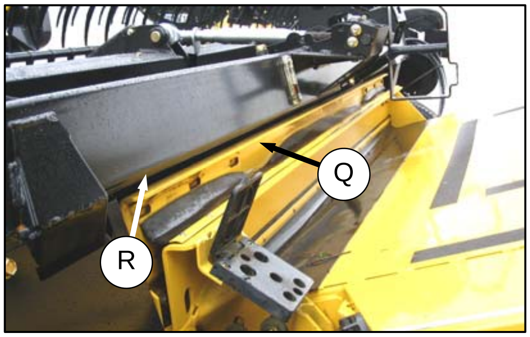


3. Position coupler (E) onto storage plate (J) on combine.

e. Remove electrical connector (K) from adapter, and connect to combine at (L). Replace cover (M) on adapter receptacle.



f. Lift lever (N), and pull and lower handle (O) to disengage feeder house/adapter lock (P).



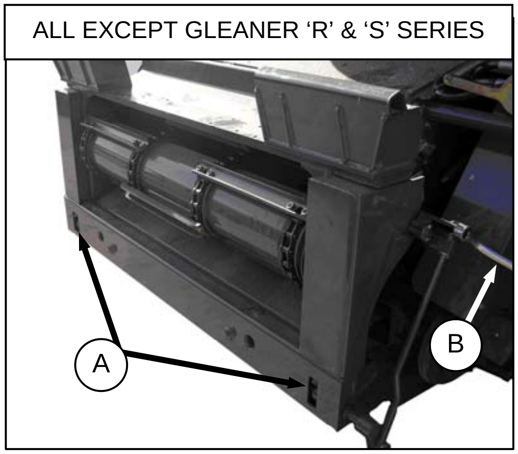
g. Lower feeder house until feeder house (Q) disengages adapter support (R).

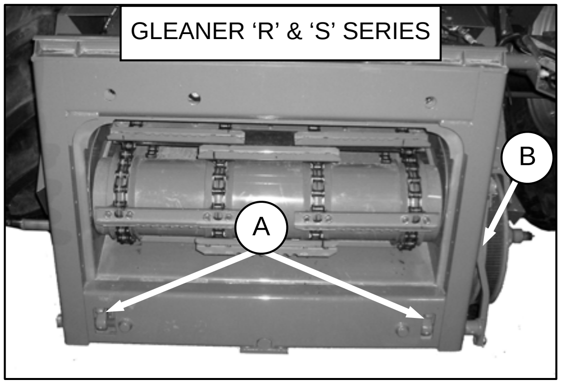
h. Slowly back combine away from adapter.

7.3.6 AGCO

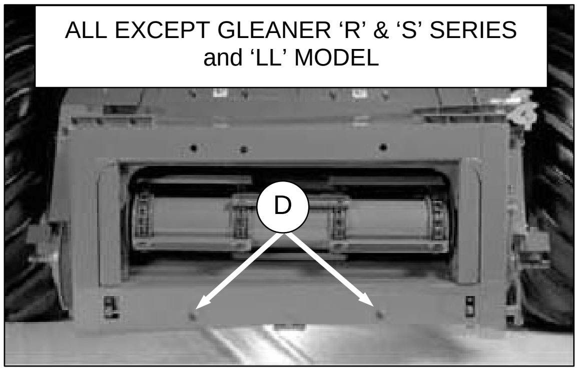
Gleaner R and S Series
Challenger 660, 670, 680B
Massey 9690, 9790, 9895

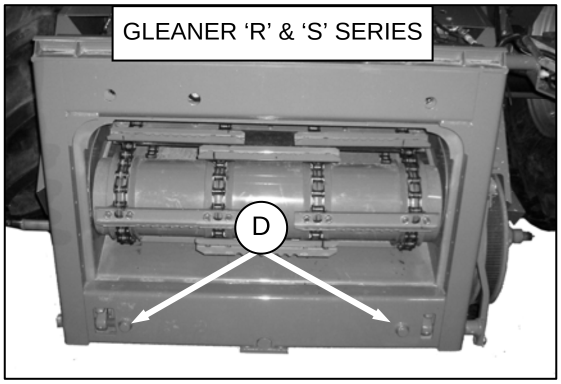
7.3.6.1 Attachment

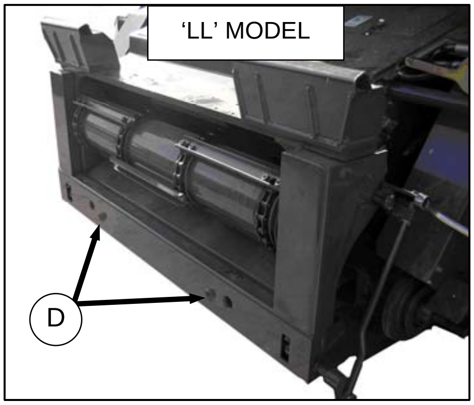

ALL EXCEPT GLEANER 'R' & 'S' SERIES

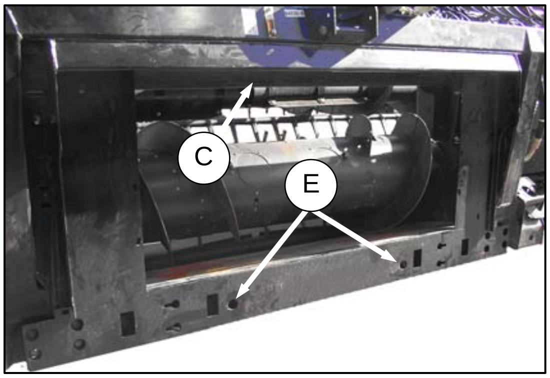

GLEANER 'R' & 'S' SERIES

a. Retract lugs (A) at base of feeder-house with lock handle (B).


ALL EXCEPT GLEANER 'R' & 'S' SERIES and 'LL' MODEL


GLEANER 'R' & 'S' SERIES


'LL' MODEL



b. Slowly drive combine up to adapter until feeder house is directly under the adapter top cross member (C), and alignment pins (D) are aligned with holes (E) in adapter frame.

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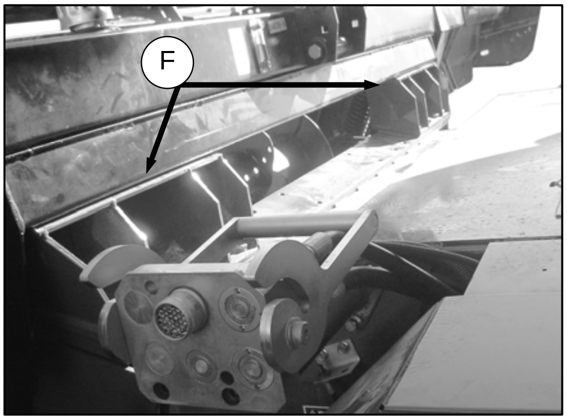


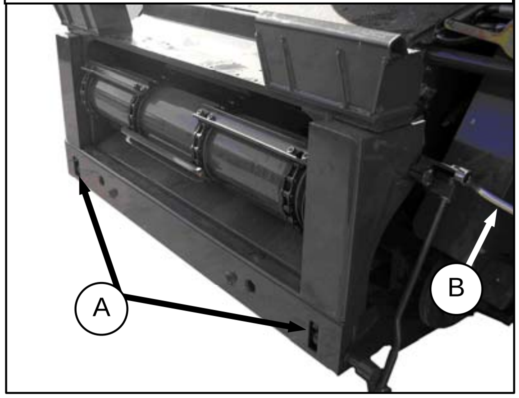
c. Raise feeder house to lift adapter, ensuring feeder house saddle (F) and alignment pins are properly engaged in adapter frame.

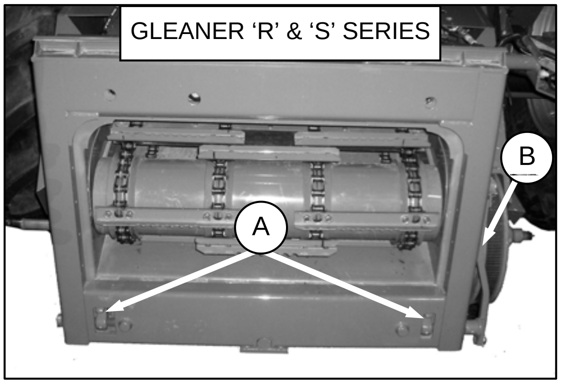
d. Raise header slightly off the ground.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

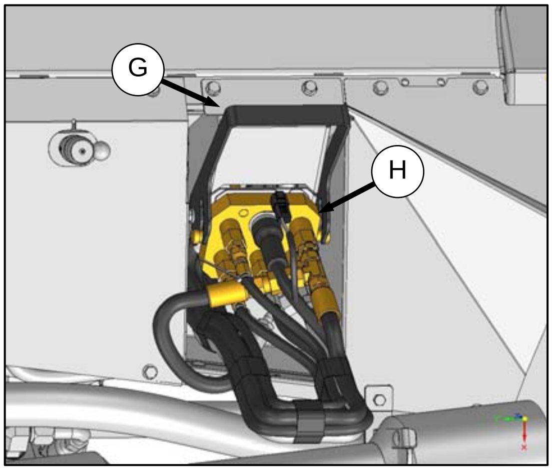
ALL EXCEPT GLEANER ‘R’ & ‘S’ SERIES



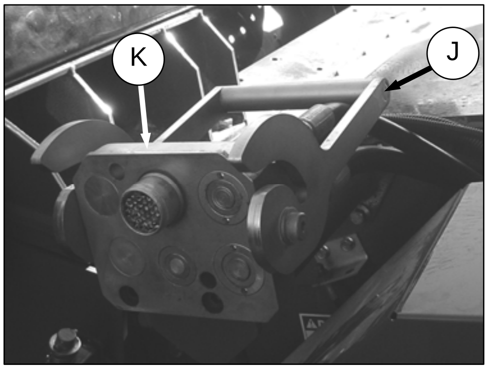

GLEANER ‘R’ & ‘S’ SERIES

e. Engage lugs (A) with adapter using lock handle (B).

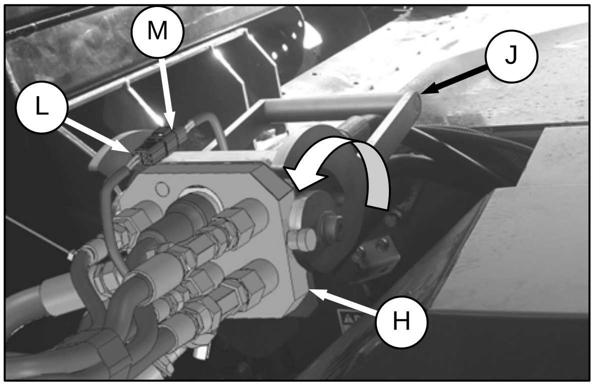
f. Connect adapter hydraulic quick coupler to combine receptacle as follows:



1. Raise handle (G) to release coupler (H) from adapter.



2. Push handle (J) on combine to full open position.
3. Clean mating surfaces of coupler and receptacle if necessary.



4. Position coupler (H) onto combine receptacle (K), and pull handle (J) to fully engage coupler into receptacle.
5. Connect reel fore-aft/header tilt selector harness (L) to combine harness (M).

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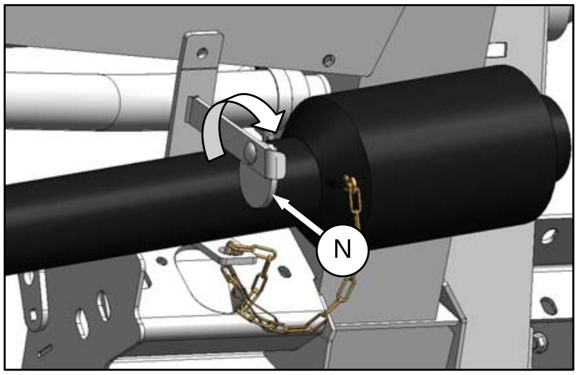
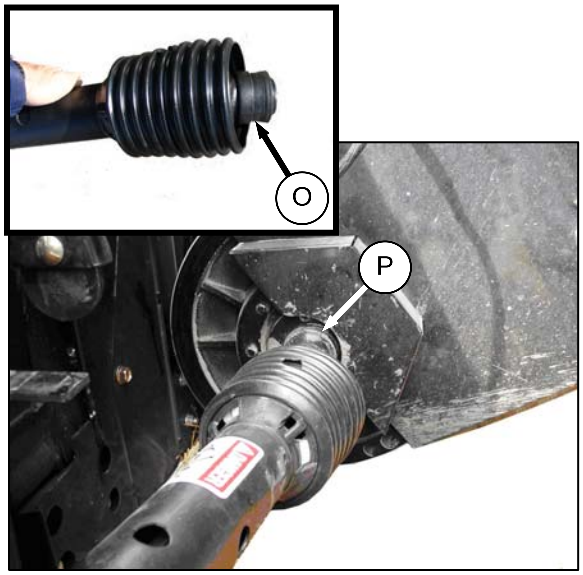
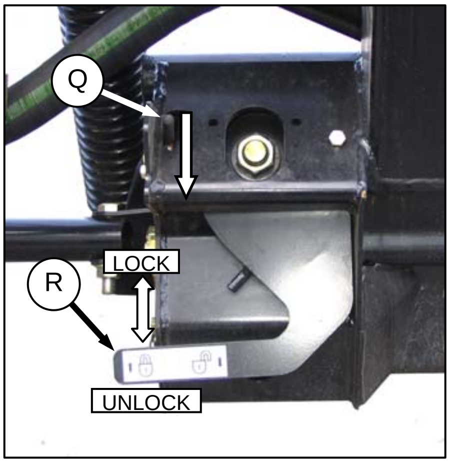


g. Rotate disc (N) on adapter driveline storage hook, and remove driveline from hook.



h. Pull back collar (O) on end of driveline, and push onto combine output shaft (P) until collar locks.



i. Disengage both adapter float locks by moving latch (Q) away from adapter, and moving lever (R) at each lock to lowest position.

7.3.6.2 Detachment

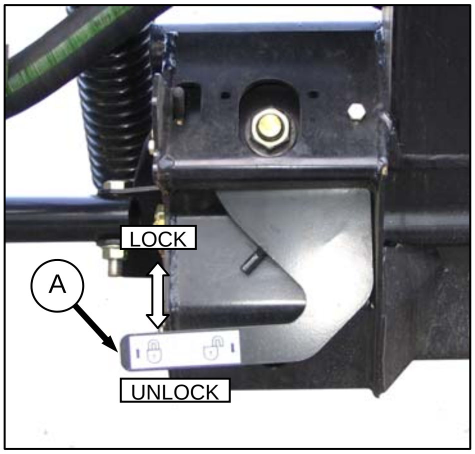
a. Choose a level area. Position header slightly off the ground. Stop engine, and remove key

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



b. Engage the adapter float locks by lifting lever (A) at each lock until it latches into the lock position.

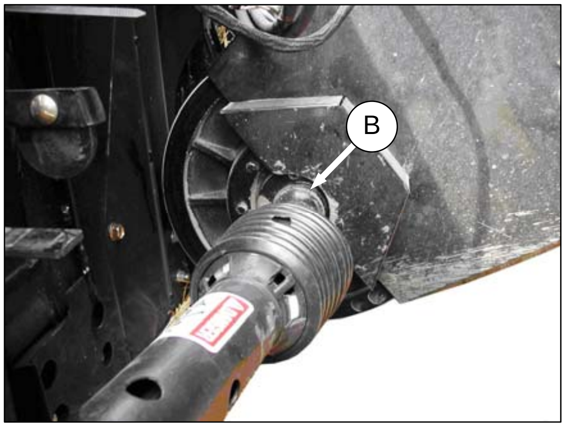
IMPORTANT

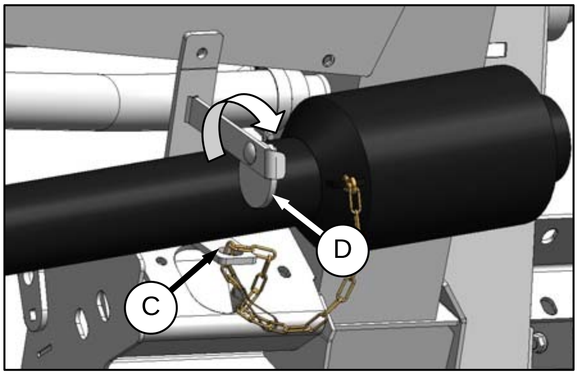
If slow speed transport wheels are installed, header may be detached in either Transport or Field mode.

If detaching with wheel in Field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.

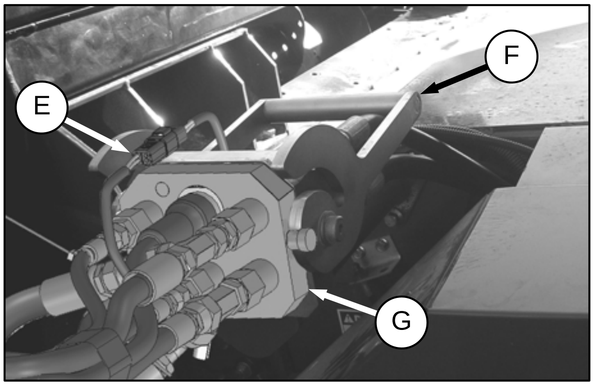
IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to Section 7.9.1 Cutting Height.





c. Disconnect driveshaft (B) from combine, and slide driveshaft in hook (C) so that disc (D) drops to secure driveshaft.



d. Disconnect harness at connector (E).

e. Move handle (F) on combine multi-coupler to full open position to release coupler (G) from combine.

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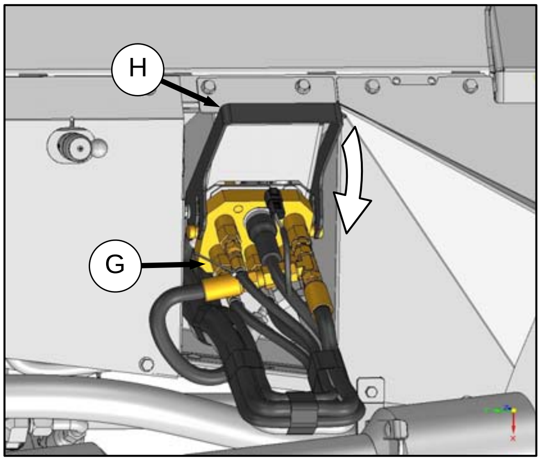
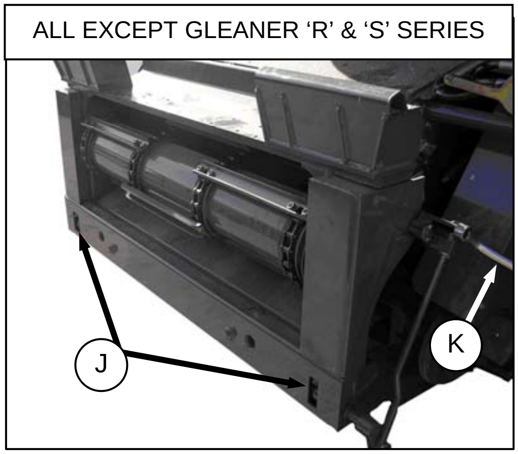
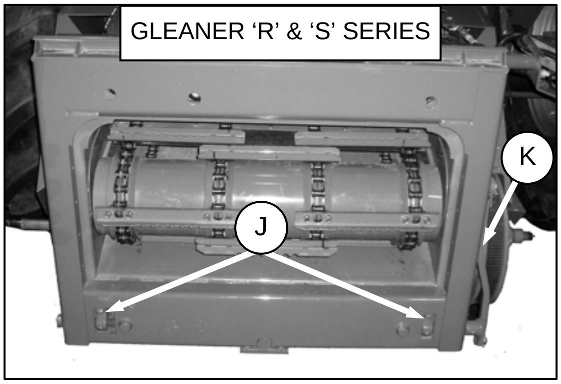


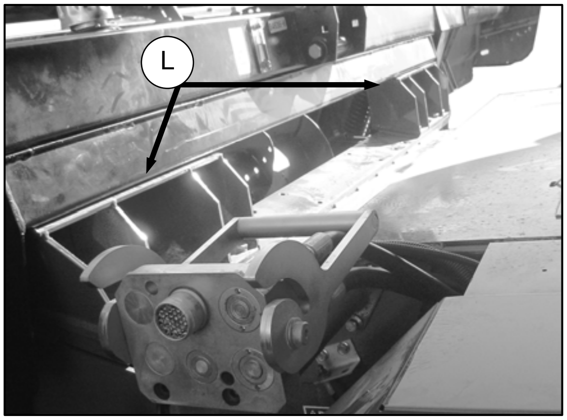
f. Raise handle (H) on adapter, and place coupler (G) on adapter receptacle.

g. Lower handle (H) to lock coupler.


ALL EXCEPT GLEANER ‘R’ & ‘S’ SERIES


GLEANER ‘R’ & ‘S’ SERIES

h. Retract lugs (J) at base of feeder-house with lock handle (K).



i. Lower feeder house until saddle (L) disengages and clears adapter support.

j. Slowly back combine away from adapter.

7.4 ATTACHING AND DETACHING HEADER WITH ADAPTER

Using this procedure, the adapter remains attached to the combine, and is appropriate when:

- detaching the header for use on a windrower,
- changing headers, or
- performing certain maintenance tasks.

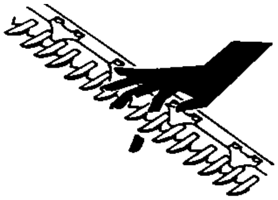
The procedure is the same for all makes and models of combines. The headers can be attached to the adapter from either Field configuration or Transport configuration.

7.4.1 Detaching

a. Disconnect adapter deck from cutterbar as follows:

1. Start engine, and tilt header to almost full forward position to increase clearance under adapter feed draper.
2. Stop engine, and remove key.

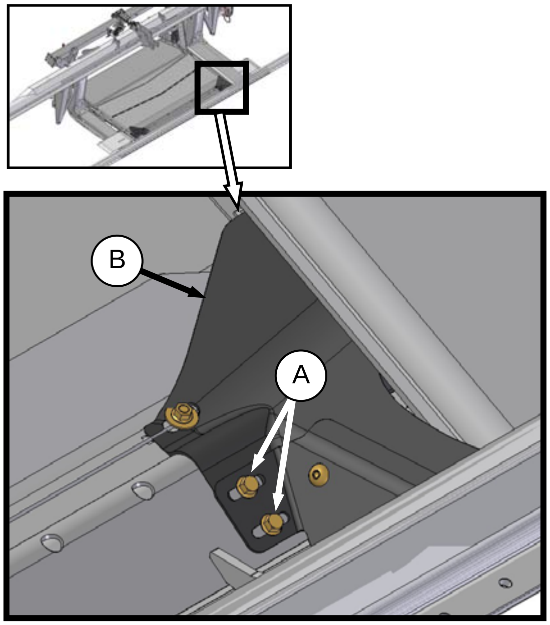
WARNING



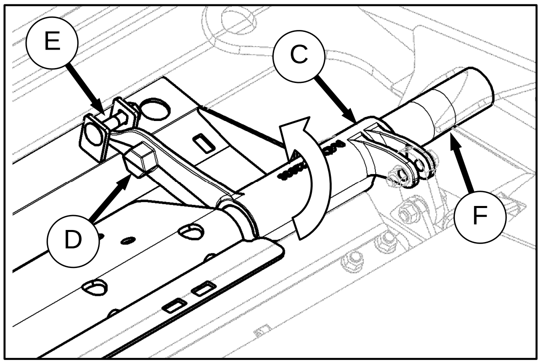
Keep hands clear of the area between guards and sickle at all times.

CAUTION

Wear heavy gloves when working around or handling sickles.



3. Remove two hex head bolts (A) attaching filler (B) to transition pan at front corners, and fold back filler (B) for access to latch (C).



4. Rotate latch (C) down with a 15/16 wrench on hex (D) so that bolt (E) can be removed.
5. Rotate latch (C) up and back to lower adapter deck and disengage transition pan tube (F).
6. Re-install bolt (E).
7. Repeat for other side of the feed draper deck.

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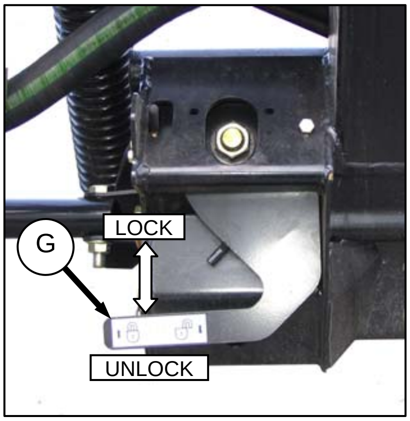
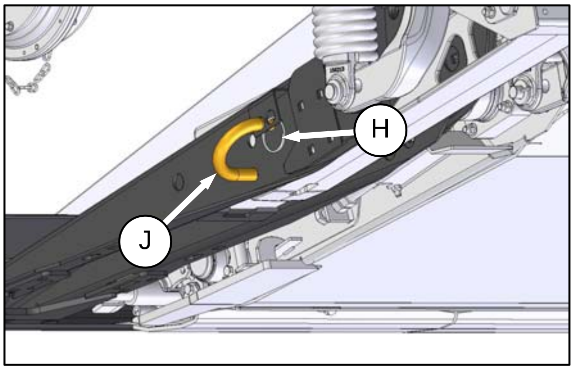


b. Engage the adapter float locks by lifting lever (G) until it latches into the lock position.

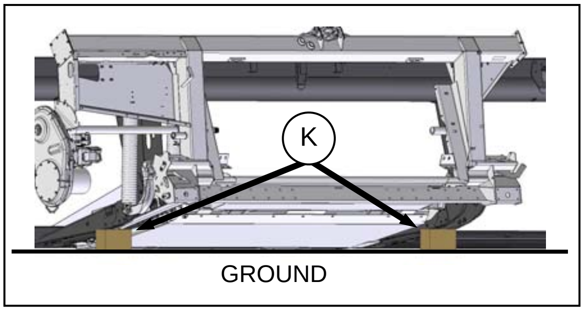
DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

c. Disengage reel props, start engine, lower reel and raise header fully. Stop engine, remove key, and engage combine lift cylinder locks.



d. Remove ring (H) from pin (J), and remove pins from header legs at delivery opening.



e. Place two 6 inch (150 mm) blocks (K) under header legs at delivery opening.

NOTE

Stabilizer/Transport wheels can be used to support header.

f. Disengage lift cylinder locks.

g. Start engine and lower header until it rests on blocks (K) (or stabilizer wheels) and the ground.

NOTE

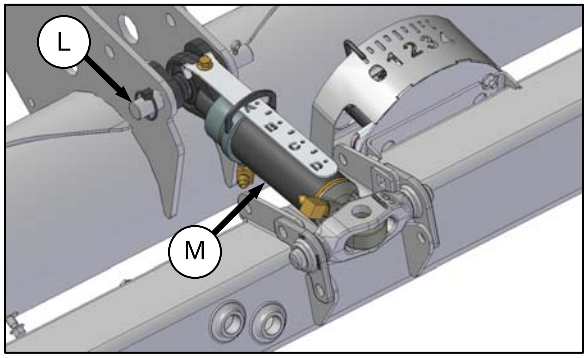
Length of hydraulic center-link may need to be adjusted to relieve load on link.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

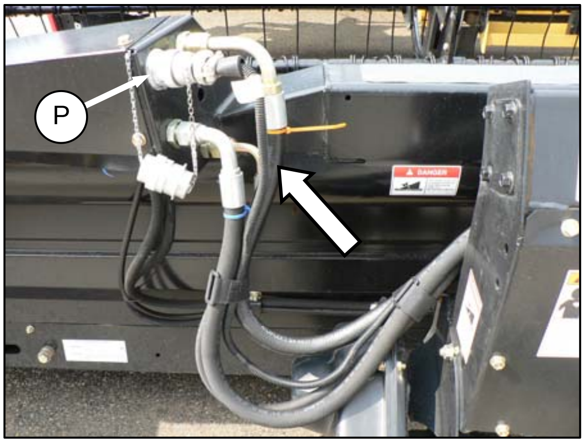
h. Stop engine, and remove key from ignition.

i. Disconnect hydraulic center-link:



1. Remove lynch pin and clevis pin (L), then lift center-link (M) clear of bracket.
2. Replace pin (L), and secure with lynch pin.

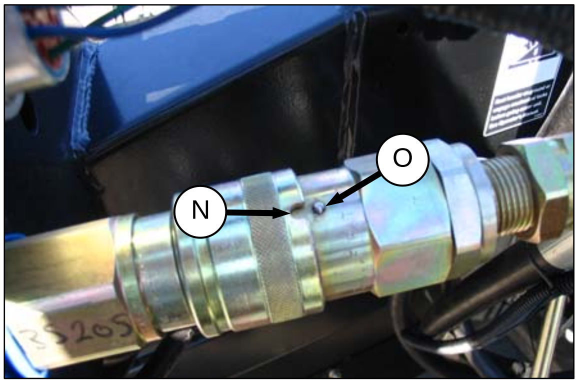
(continued next page)



j. Disconnect knife and draper drive hydraulic hoses at bracket. Cap off ends immediately to avoid loss of oil.

k. Store and secure hoses on adapter frame.

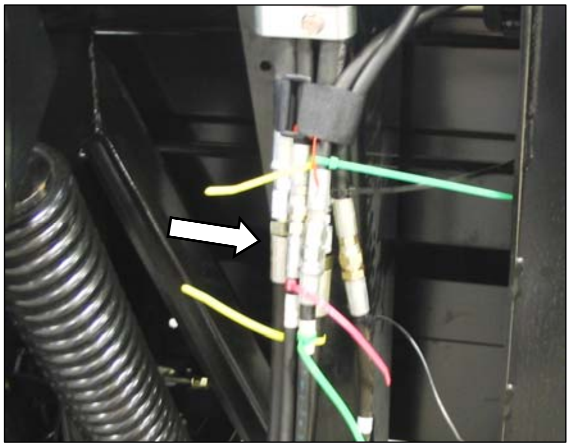
l. If quick disconnects are installed, disconnect as follows:



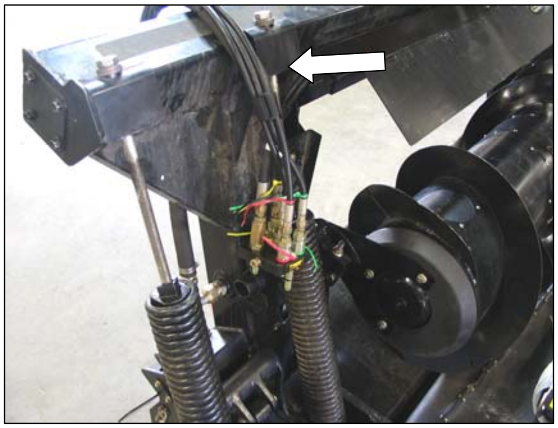
1. Line up slot (N) in collar with pin (O) on connector.
2. Push collar toward pin, and pull connector to disengage.
3. Install plugs or caps on hose ends (if equipped).

m. Disconnect electrical connector (P) by turning collar counterclockwise, and pulling connector to disengage.

n. Store and secure hoses and electrical connector on adapter.



o. Disconnect reel hydraulics. Cap off end immediately to avoid loss of oil.

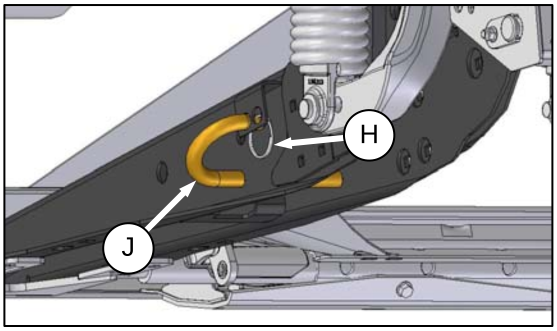


p. Store and secure hoses to adapter frame.

q. Ensure header is on ground, or is supported by wheels in Transport mode.

r. Start engine, and slowly back combine away from header.

s. Stop engine, and remove key.



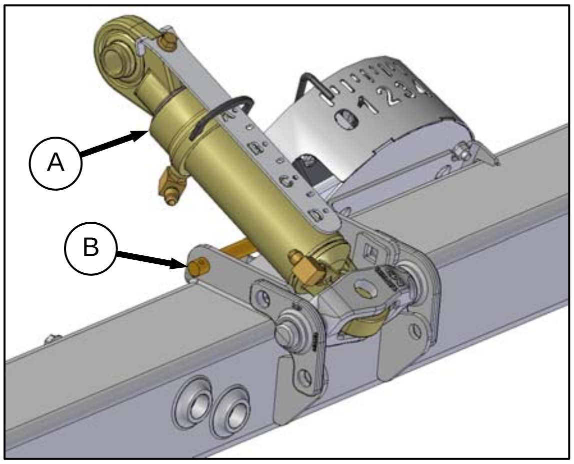
t. Replace pin (J) in header legs, and secure with ring (H).

7.4.2 Attaching

The D65 Harvest Header® can be attached to the adapter from either Field configuration or Transport configuration.

NOTE

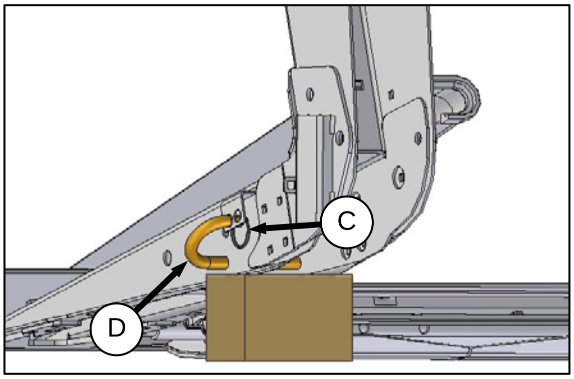
Stabilizer/Transport wheels can be used to support header. Refer to Section 7.9.1 Cutting Height.



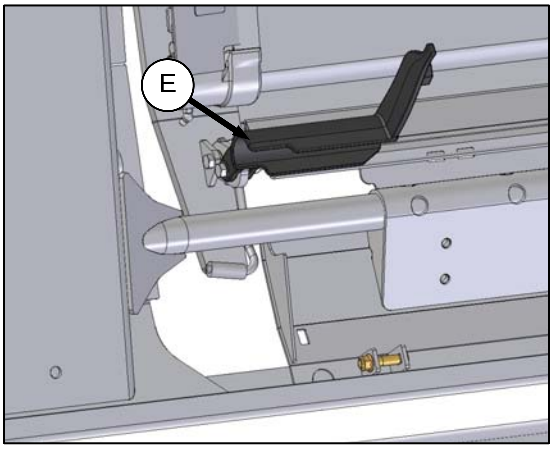
a. Prop up hydraulic center-link (A) with pin or equivalent tool at (B).

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



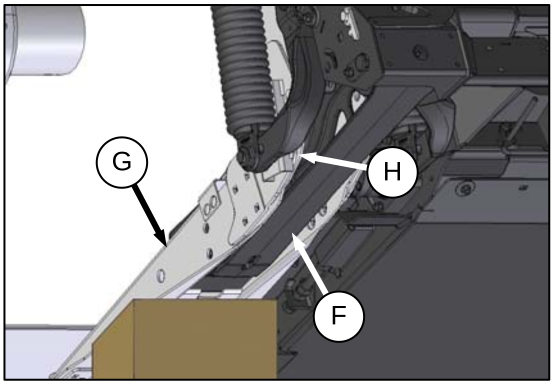
b. Remove ring (C) from pin (D) and remove pins from header legs at delivery opening.



c. Ensure latches (E) at front corners of adapter are rotated towards the rear of adapter.

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.



d. Start engine, and lower combine feeder house so that adapter arms (F) are aligned with header legs (G).

e. Drive slowly forward, maintaining alignment between adapter arms (F) and header legs (G).

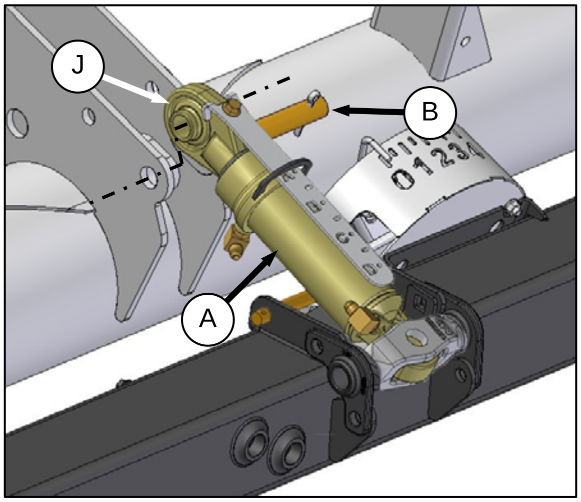
f. Keep adapter arms (F) just under the legs (G) to ensure adapter legs seat properly in the header linkage supports at (H).

IMPORTANT

Keep hydraulic hoses clear to prevent damage when driving into header.

g. Continue forward until adapter arms (F) contact stops in legs (G).

(continued next page)

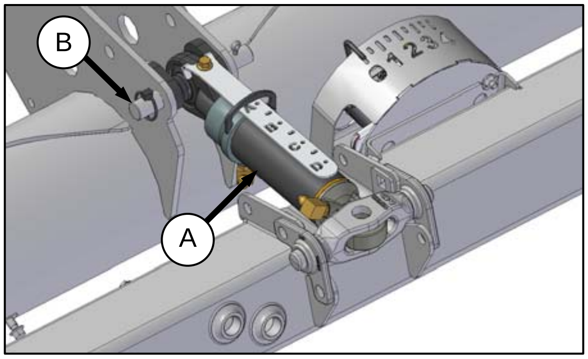


h. Adjust length of center-link (A) with header angle hydraulics to approximately align eye (J) on center-link with hole in header bracket.

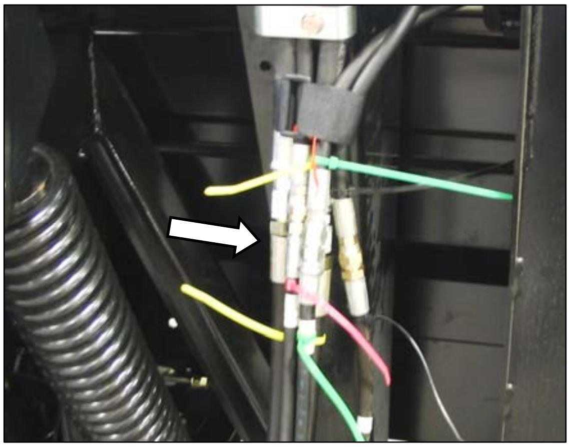
i. Shut down engine, and remove key.

j. Connect center-link:

   1. Pull pin (B) part way out of bracket, and remove prop from under center-link (A).



   2. Install pin (B) through center-link (A) and bracket, and secure with lynch pin.



k. Connect reel hydraulics at right end of adapter matching colored plastic ties.

CAUTION

Always connect center-link before fully raising header.

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

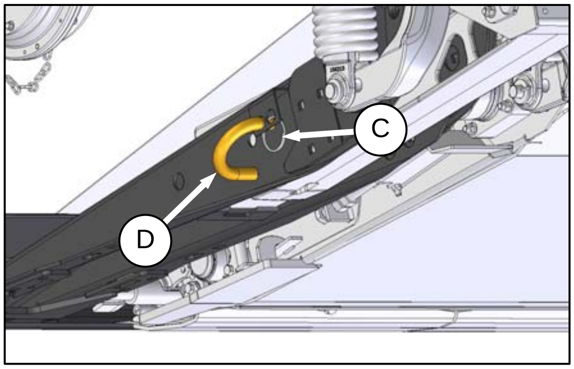
l. Start engine and raise adapter slowly, making sure adapter legs engage in header legs.

m. Raise header fully, stop engine, and remove key.

DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

n. Engage header lift cylinder stops on combine.



o. Replace pin (D) in header legs, and secure with ring (C).

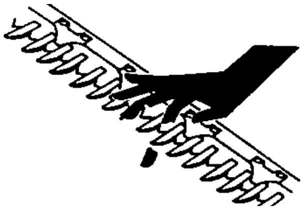
p. Remove lift cylinder locks, start engine, and lower header to ground. Adjust header angle to the shallowest setting (shortest center-link).

(continued next page)

q. Raise reel fully, shut down engine, and remove key from ignition.

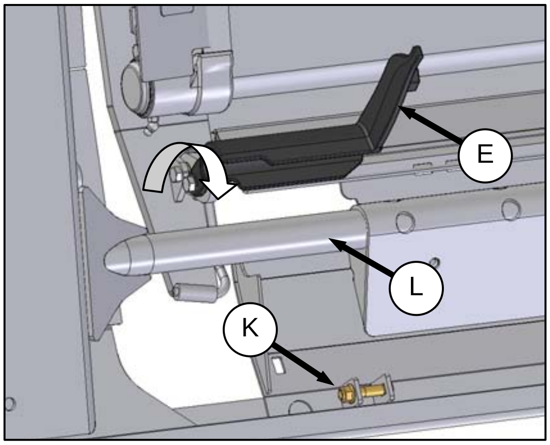
r. Engage reel props.

WARNING

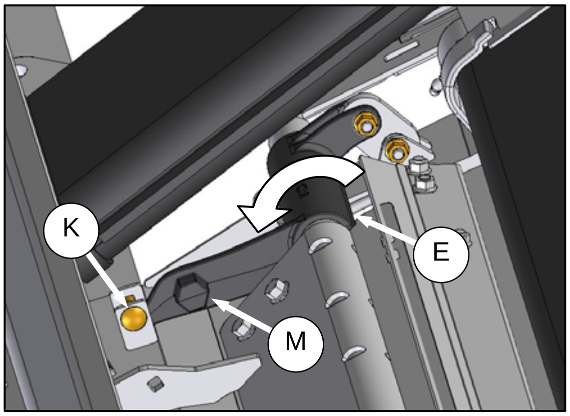


Keep hands clear of the area between guards and sickle at all times.

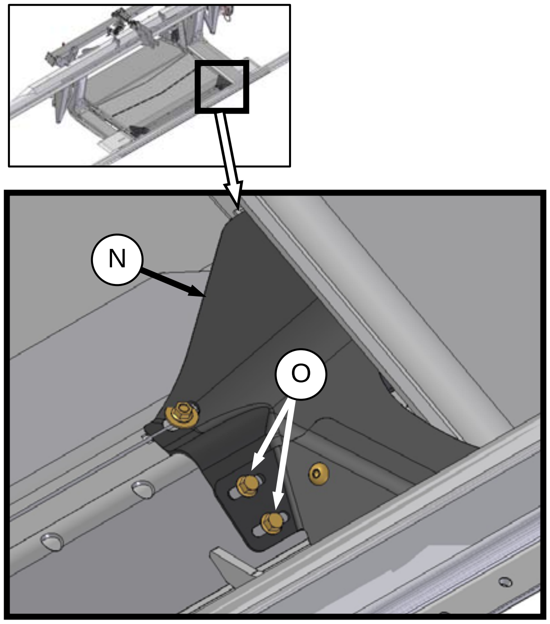
s. Attach adapter feed deck:



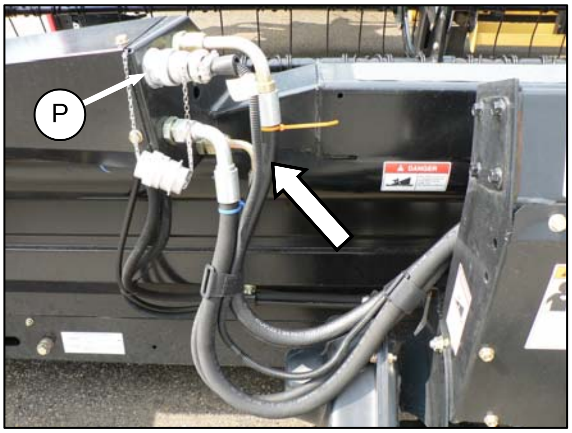
1. Remove bolts (K) at either side of opening to allow attachment of adapter deck.
2. Rotate latches (E) forward and down engage transition pan tube (L).



3. Rotate latches (E) down with a 15/16 in. wrench on hex (M) to raise feed deck so that bolt (K) can be re-installed to lock the latch position.
4. Repeat for other side of feed draper deck.



t. Install fillers (N) at each front corner of feed deck with two 3/8 inch x 0.75 long hex head bolts (O) at each location.



u. Connect knife and draper drive hydraulics as shown above, matching colored plastic cable ties.

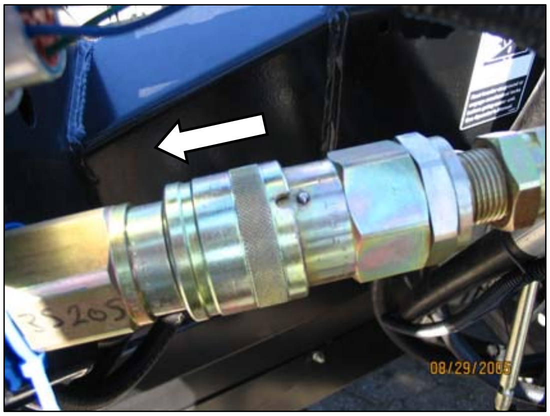
v. Attach electrical connector (P):

1. Remove cover on receptacle.
2. Align lugs on connector with slots in receptacle, push connector onto receptacle and turn collar on connector to lock it in place.
3. Attach cover to mating cover on combine wiring harness.

(continued next page)

w. If quick disconnects are installed, connect as follows:

  1. Remove covers (if installed) from receptacles and hose ends.
  2. Check connectors and clean if required.



  3. Push hose connector onto mating receptacle until collar on receptacle snaps into lock position.

NOTE

Ensure hoses are clear of driveline and adjacent structure.

NOTE

It is not necessary to bleed the system by loosening fittings.

x. Check float, and if the header is level. Refer to Section 7.9.2 Header Float and Section 7.11 HEADER LEVELLING.

7.5 BREAK-IN PERIOD

a. After attaching header to combine for the first time, operate the machine with reel drapers and sickle running slowly for 5 minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.

NOTE

Reel and side drapers will not operate until oil flow fills the lines.

CAUTION

Before investigating an unusual sound or attempting to correct a problem, shut off engine, and remove key.

NOTE

Until you become familiar with the sound and feel of your new header, be extra alert and attentive.

b. Perform the items specified in to Section 8.4.2 Break-In Inspections.

7.6 SHUTDOWN PROCEDURE

CAUTION

Before leaving the combine seat for any reason:

- **Park on level ground if possible.**
- **Lower the header fully.**
- **Place all controls in NEUTRAL or PARK.**
- **Disengage header drive.**
- **Stop engine, and remove key from ignition.**
- **Wait for all movement to stop.**

7.7 HEADER CONTROLS

CAUTION

Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

See your Combine Operator's Manual for identification of in-cab controls for:

- Header Drive Clutch
- Header Height
- Header Angle
- Ground Speed
- Reel Speed
- Reel Height
- Reel Fore-Aft Position

7.8 HEADER SET-UP

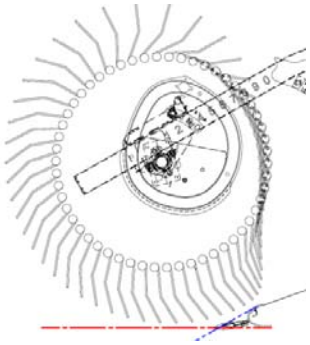
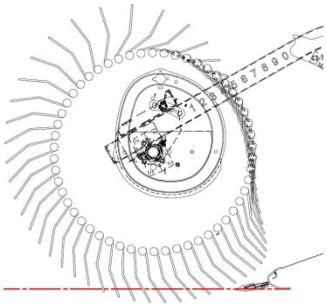
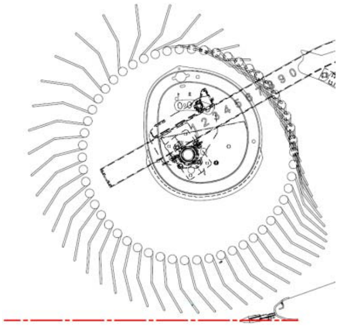
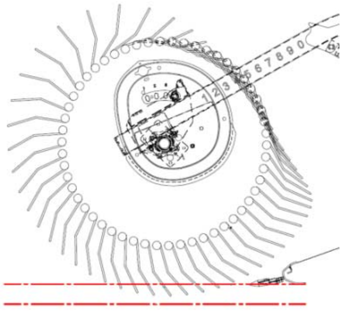
7.8.1 Header Settings

This table is a guideline for setting up the D65 Harvest Header ®. Settings other than those suggested can be made to suit various crops and conditions not covered here. See also Section 7.8.2 *Pickup Reel Settings*.

Crop Type	Stubble Height (in.)	Crop Condition	Divider Rods	Draper Speed Setting (Note 7)	Header Angle (Notes 1 and 4)	Knife Speed Setting (Note 2)	Reel Cam Setting	Reel Speed % (Note 3)	Reel Position	Skid Shoe Position (Note 4)	Stabilizer Wheel (Notes 4 and 5)	Upper Cross Auger	Notes
Cereals	0	Light	Off	8	B - C	600–650	3	10–15	6 or 7	Up or Center	Storage	Not Required	**Note 1:** Set header angle as shallow as possible (setting A) with center-link and skid shoes while maintaining cutting height. **Note 2:** Minimum knife drive pulley rpm. Applicable only to single-knife headers. **Note 3:** Percentage above ground speed. **Note 4:** Cutting height is controlled with a combination of skid shoes and header angle. **Note 5:** Stabilizer wheels are used to limit the side to side movement when cutting off the ground in rolling terrain, and to minimize bouncing. **Note 6:** Available through your Dealer Parts Department. Whisker divider not required on both ends of header. **Note 7:** Setting on CA25 draper control.
		Normal	On	7		550–600	2	10					
		Heavy										Recommended	
		Lodged	Off			525–600	3 or 4	5–10	4 or 5			Not Required	
	4–8	Light	Off	8	B - C	600–650	4	10–15	6 or 7	Center or Down	Note 5	Not Required	
		Normal	On	7	A	550–600	2	10					
		Heavy										Recommended	
		Lodged	Off		D	525–600	3 or 4	5–10	4 or 5	Down		Not Required	
	10 +	Light	Off	8	A	600–650	4	10–15	6 or 7	Not Applicable	Note 5	Not Required	
		Normal	On	7		550–600	2	10					
		Heavy			B - C								
		Lodged	Off			525–600	3 or 4	5–10	4 or 5				
Canola	4–8	Light	On	7	A	600–650	2	5–10	6 or 7	Down	Note 5	Recommended	
		Normal			B - C	550–600	1	10		Center or Down			
		Heavy		8					3 or 4	Down			
		Lodged		7	D	525–600	2	5–10		Center or Down			
	10 +	Light	On	7	A	600–650	2	5–10	6 or 7	Not Applicable	Note 5	Recommended	
		Normal			B - C	550–600		10					
		Heavy		8			1 or 2		3 or 4				
		Lodged		7	D	525–600	2 or 3	5–10					
California Rice	0	Light	Whisker (Note 6)	4	D	600–650	2	10–15	6 or 7	Up or Center	Storage	Not Required	
		Normal			B - C	550–600		10	4 or 5				
		Heavy											
		Lodged			D	525–600		5–10					
	4–8	Light	Whisker (Note 5)	4	D	600–650	3	10–15	6 or 7	Center or Down	Note 5	Not Required	
		Normal			B - C	550–600		10					
		Heavy											
		Lodged			D	525–600	4	5–10					
	10 +	Light	Whisker (Note 5)	4	A	600–650	3	10–15	6 or 7	Not Applicable	Note 5	Not Required	
		Normal			B - C	550–600		10					
		Heavy											
		Lodged			D	525–600	4	5–10					
Delta Rice	2–6	Light	Off	6	D	600–650	2 or 3	10–15	6 or 7	Center or Down	Note 5	Not Required	
		Normal			B - C	550–600		10					
		Heavy											
		Lodged			D	525–600	3 or 4	5–10	4 or 5				
	8 +	Light	Off	6	A	600–650	2 or 3	10–15	6 or 7	Not Applicable	Note 5	Not Required	
		Normal			B - C	550–600		10					
		Heavy											
		Lodged			D	525–600	3 or 4	5–10	4 or 5				
Soybeans	0	Light	On	8	D	600–650	2	5–10	6 or 7	Up or Center	Storage	Not Required	
		Normal		7	B - C	550–600		10					
		Heavy											
		Lodged			D	525–600		5–10					
Flax	2–6	Light	On	8	B - C	600–650	2	5–10	6 or 7	Center or Down	Note 5	Not Required	
		Normal		7	A			10					
		Heavy			B - C								
		Lodged			D			5–10		Down			
Peas	0	Light	On	7	B - C	600–650	2	5–10	6 or 7	Up or Center	Storage	Recommended	
		Normal				550–600		10					
		Heavy							4 or 5				
		Lodged			D	525–600		5–10					
Lentils	0	Light	On	8	B - C	600–650	2	5–10	6 or 7	Up or Center	Storage	Not Required	
		Normal		7		550–600		10					
		Heavy											
		Lodged			D	525–600		5–10					

7.8.2 Pickup Reel Settings

The following chart illustrates the profile of the reel at each cam or finger pitch setting as well as the reel position relative to the ground at different positions on the reel arm. Refer to the chart in the previous section for applicability of each finger pattern and reel position. See **NOTES** on the next page.

CAM SETTING NUMBER (Finger Speed Gain)	REEL POSITION NUMBER	REEL FINGER PATTERN
1 (0)	6 or 7	
2 (20%)	3 or 4	
3 (30%)	6 or 7	
4 (35%)	2 or 3	

NOTES:

a. Adjust reel forward to get closer to ground when tilting header back. Fingers/Tines will dig into ground at extreme reel forward positions, so adjust skid shoes or header angle to compensate. Adjust reel rearward to get reel further away from ground when tilting header forward.

b. Header Tilt can be increased to get reel closer to ground or decreased to get reel further away from ground while keeping material flowing onto drapers.

c. To leave maximum amount of stubble behind in lodged crop, raise header but increase header tilt to keep reel close to ground. Position the reel fully forward.

d. Reel may have to be moved back to prevent lumps or plugging on cutterbar in thinner crops.

e. Minimum crop carrying capacity (minimum area of exposed draper between reel and header backsheet) occurs with the reel in the furthest aft position.

f. Maximum crop carrying capacity (maximum area of exposed draper between reel and header backsheet) occurs with the reel in the furthest forward position.

g. The tip speed of the fingers/tines at the cutterbar becomes higher than the reel speed at higher cam settings due the nature of the cam action. Refer to Reel Settings Chart on previous page.

7.9 HEADER OPERATING VARIABLES

Satisfactory function of the header in all situations requires making proper adjustments to suit various crops and conditions.

Correct operation reduces crop loss and allows cutting of more acres. As well, proper adjustments and timely maintenance will increase the length of service you receive from the machine.

The variables listed below and detailed on the following pages will affect the performance of the machine. You will quickly become adept at adjusting the machine to give you the desired results.

VARIABLE	SECTION
Cutting Height	7.9.1
Header Float	7.9.2
Header Angle	7.9.3
Reel Speed	7.9.4
Ground Speed	7.9.5
Draper Speed	7.9.6
Knife Speed	7.9.7
Reel Height	7.9.8
Reel Fore-Aft Position	7.9.9
Reel Tine Pitch	7.9.10
Crop Divider Rods	7.9.11

7.9.1 Cutting Height

Harvest Headers are designed to allow an Operator to cut the crop above the ground for a desired stubble height, or to cut the crop at ground level with the header on the ground.

Cutting height will vary, depending on factors including whether windrowing or straight-cutting, type of crop, etc.

7.9.1.1 Cutting Off The Ground

Cutting height is controlled with a combination of header lift cylinder adjustment and a stabilizer wheel system, or a stabilizer/slow speed transport wheel system.

The stabilizing wheel system in both options is designed to minimize bouncing at the header ends, and may be used to float the headers to achieve an even cutting height when cutting above ground level in cereal grains.

The system can provide very even stubble height and greatly reduced operator fatigue.

The proper setting requires 'balancing' the amount of header weight carried by the float and the stabilizer wheels.

Refer to Section 7.8.1 Header Settings for recommended use in specific crops and crop conditions.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

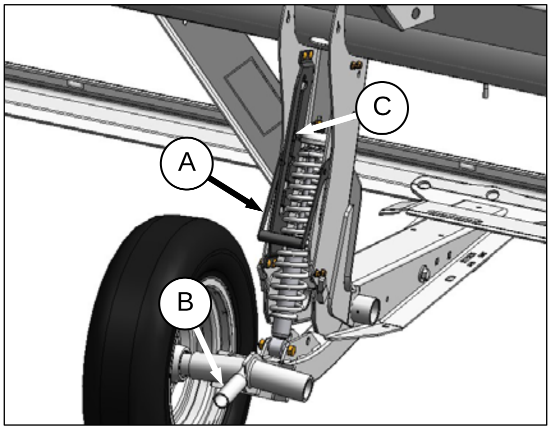
a. Raise the header so that the stabilizer wheels are off the ground. Shut down engine, and remove the key.

b. Check that the float is working properly. See Section 7.9.2 Header Float.

c. Set up the stabilizer wheels, if installed, as follows: Otherwise, proceed to step d. on next page.

CAUTION

Handle may be under tension, especially when the wheels are on the ground. Raise header so that wheels are off the ground before making adjustments.



LH SHOWN - RH OPPOSITE

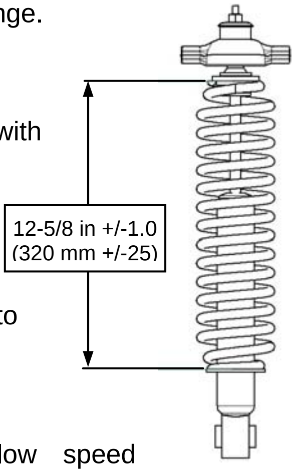
1. Support wheel weight by lifting slightly with one hand on handle B. Pull up on handle (A) to release lock.
2. Lift wheel with handle (B) and engage support channel into center slot (C) in upper support.
3. Push down on handle (A) to lock.

(continued next page)

4. Lower header to desired cutting height using combine controls, and check spring length as shown. Re-adjust wheels as required to achieve range.

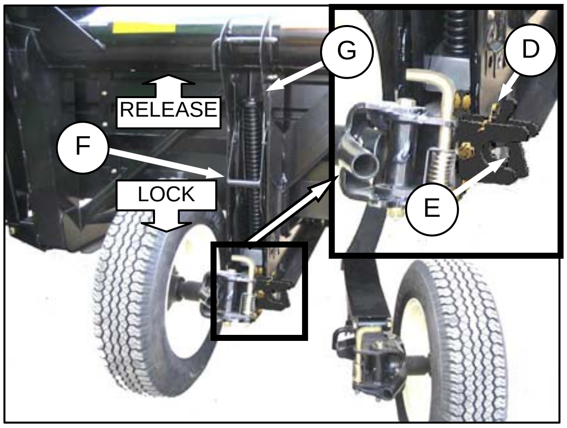
IMPORTANT

Continuous operation with excessive spring compression (i.e. spring length shorter than (11-5/8 in. [295 mm]) can result in damage to suspension system.



d. Set up the stabilizer/slow speed transport wheels, if installed, as follows: Otherwise, proceed to step e.

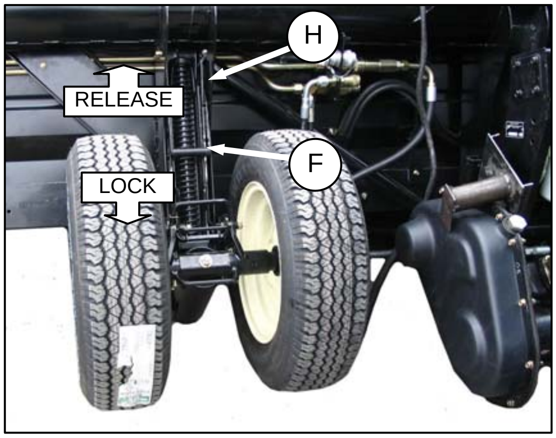
1. Adjust right wheels as follows:



TRANSPORT TO FIELD - RH SIDE

i. Remove hairpin (D) from latch.
ii. Disengage latch (E) and lift right wheel out of hook, and place on ground as shown. This reduces weight of assembly, and makes adjusting wheel position easier.
iii. Support left wheel weight by lifting slightly with one hand. Pull up on handle (F) to release lock.
iv. Lift left wheel to desired height, and engage support channel into slot (G) in upper support.
v. Push down on handle (F) to lock.
vi. Lift right hand wheel back into field position, and ensure latch (E) is engaged.
vii. Secure latch with hairpin (D).

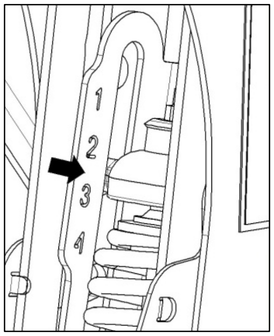
2. Adjust left wheels as follows:



i. Support wheel weight by lifting slightly with one hand. Pull up on handle (F) to release lock.
ii. Lift wheels to desired height, and engage support channel into slot (H) in upper support.
iii. Push down on handle (F) to lock.
iv. Lower header to desired cutting height using combine controls, and check load indicator as shown below. Re-adjust wheels as required to achieve range between **2** and **3** as shown below.

IMPORTANT

Continuous operation with excessive spring compression (i.e. load indicator reading greater than #4) can result in damage to suspension system.



e. Adjust header angle to desired working angle with the machine's header angle controls. If angle is not critical, set it to mid-position.

f. Use the combine AHHC to automatically maintain cutting height. Refer to your combine Operator's Manual and AHHC instructions for details.

NOTE

Header angle adjustments or AHHC ground pressure control may be used for 'on-the-go' cut height adjustments.

7.9.1.2 Cutting On The Ground

Cutting on the ground is controlled with a combination of skid shoes, header angle, and float adjustment, and **not** with the header lift cylinders.

NOTE

Skid shoes are standard equipment on the D65 header.

Having the header ride on the skid shoes allows the float linkage to float the header over obstacles and follow ground contours, rather than supporting the header with the cylinders.

Lowering the skid shoes or decreasing the header angle increases the cutting height. This may be desirable in stony conditions, to reduce damage to cutting components. Also, a longer stubble length helps material dry faster.

Raising the skid shoes and increasing the header angle allows the crop to be shaved.

Refer to Section 7.8.1 Header Settings for recommended skid shoe positions in specific crops and crop conditions.

Set up the header as follows:

a. Fully raise the stabilizer wheels, or slow speed transport wheels if installed. Refer to previous section.

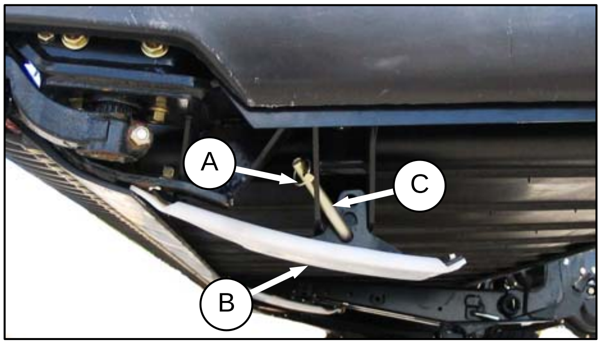
DANGER

To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key, and engage lift cylinder stops before going under machine to adjust skid shoes or for any reason.

b. Fully raise header, engage lift cylinder stops, shut off engine and remove key.

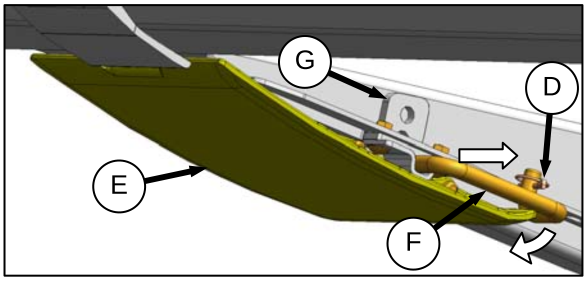
c. Adjust skid shoes to achieve desired cutting height as follows:

Outer Skid Shoes

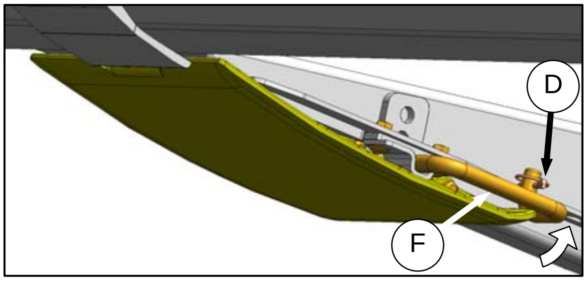


1. Remove lynch pin (A) at each skid shoe (B).
2. Hold shoe, and remove pin (C) by disengaging frame, and then pulling away from shoe.
3. Raise or lower skid shoe to desired position using holes in support as a guide.
4. Re-install pin (C), engage in frame, and secure with lynch pin (A).

Inner Skid Shoes



1. Remove lynch pin (D).
2. Hold shoe (E), and remove pin (F) by pulling down to disengage frame, and then pulling away from shoe.
3. Raise or lower skid shoe (E) to desired position using holes in support (G) as a guide.



4. Re-insert pin (F), engage in frame, and secure with lynch pin (D).

d. Check that skid shoes are adjusted to the same position.

e. Adjust header angle to desired working position using the machine's header angle controls. If angle is not critical, set it to mid-position.

f. Check header float as described in the following Section 7.9.2 Header Float.

7.9.2 Header Float

D65 combine headers perform best with minimum extra weight on the header, under normal conditions.

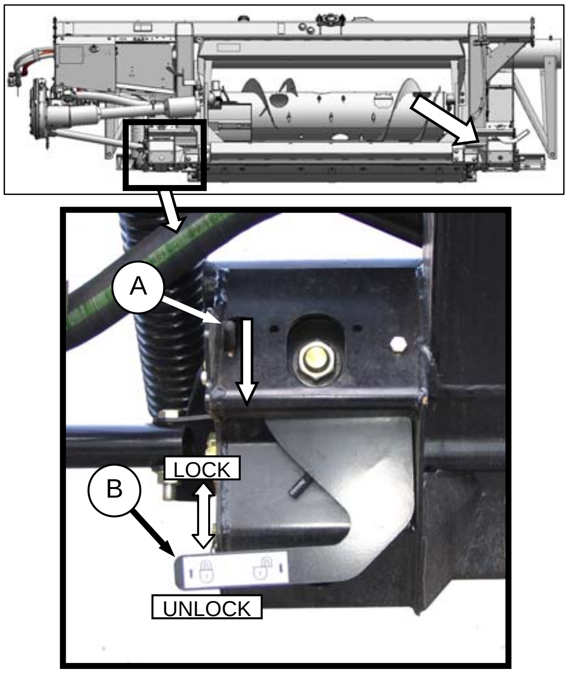
7.9.2.1 Header Float Locks

The function of the header float locks is to lock and unlock the header float system. There are two locks - one on each side of the adapter.

IMPORTANT

The float locks must be engaged when the header is being transported with the adapter attached so there is no relative movement between the adapter and header during transport.

The float locks must also be locked during detachment from the combine to allow the feeder house to release the adapter.

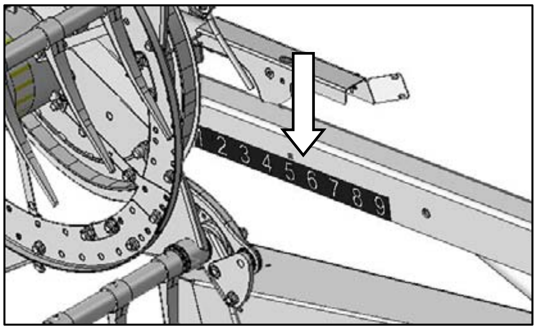


a. **Disengage** float locks by moving latch (A) downward, and moving lever (B) at each lock to lowest position. In this position, the header is unlocked, and can float with respect to the adapter.

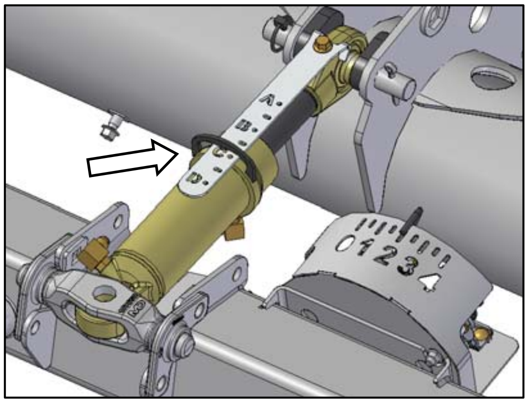
b. **Engage** the float locks by moving lever (B) up to its highest position. In this position, the header cannot move with respect to the adapter.

7.9.2.2 Checking and Adjusting Float

a. Park combine on level surface.



b. Fully lower the reel and adjust the fore-aft position between **5** and **6** on decal on the right side reel arm.



c. Adjust center-link to mid-range (between **B** and **C** on cylinder indicator).

d. Position cutterbar 8–12 in. (200–300 mm) off the ground.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

e. Stop engine, and remove key from ignition.

f. Check that adapter is level. If the adapter is not level, perform the following checks prior to adjusting the leveling linkages.

IMPORTANT

The adapter float springs are not used to level the header.

- Check combine tire pressures.
- Check that the combine feeder house is level. Refer to combine operator’s manual.
- Check that top of adapter is level with combine axle.

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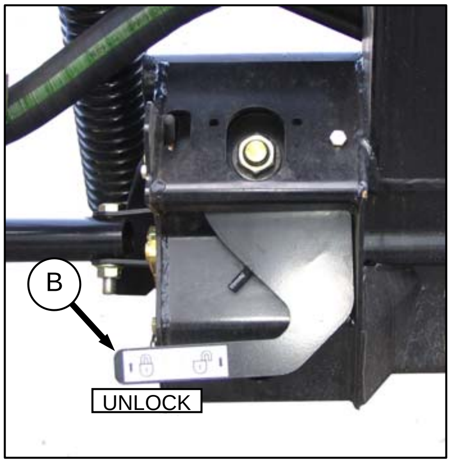
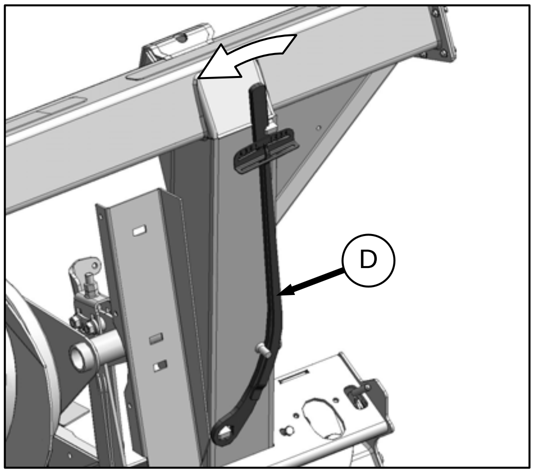
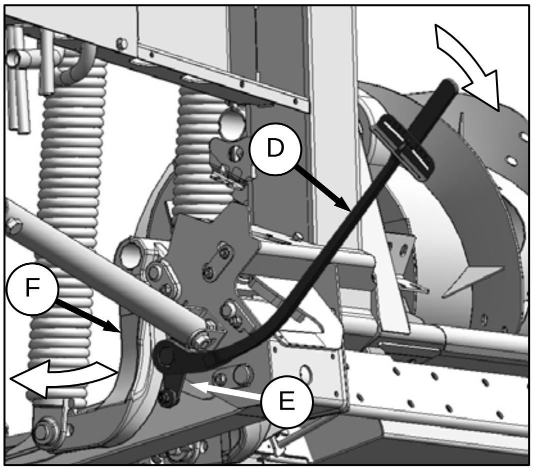


g. Move both **header** float lock levers (B) down (UNLOCK).

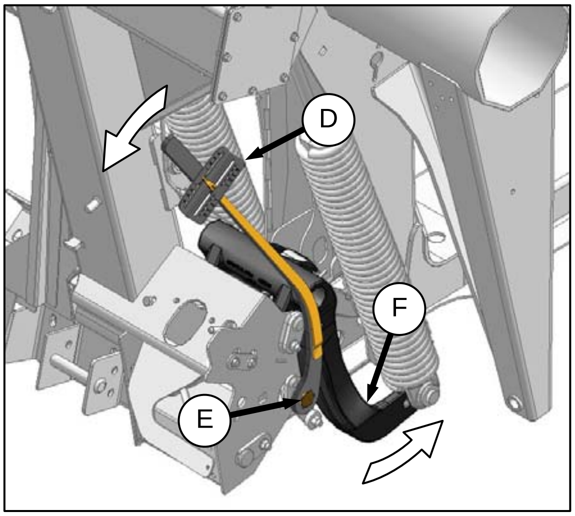
h. If header is equipped with stabilizer wheels or slow speed transport wheels, place them in storage position.



i. Remove special torque wrench (D) from storage position at RH side of adapter frame. Pull slightly in direction shown to disengage wrench from hook.



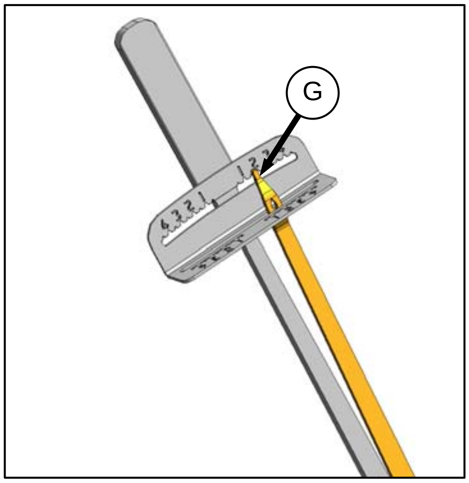
LEFT SIDE



RIGHT SIDE

j. Place torque wrench (D) onto float lock at (E). Note position of wrench for checking RH or LH side.

k. Push down on wrench to rotate bell crank (F) forward.



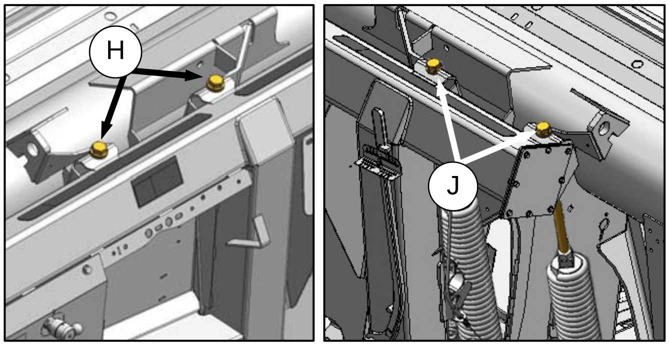
l. Continue pushing down on the wrench until indicator (G) reaches a maximum reading and begins to decrease. Note the maximum reading. Repeat for opposite side.

Use the table below as a guide for float settings.

HEADER SIZE (FT)	TORQUE SETTINGS	
	CUTTING ON THE GROUND	CUTTING OFF THE GROUND
20, 25, 30 and 35 FT	1-1/2 to 2	2 to 2-1/2
40 and 45 FT	2 to 2-1/2	2-1/2 to 3

(continued next page)

m. If reading on wrench is **high**, header is **heavy**. If reading on wrench is **low**, header is **light**.



LEFT SIDE FLOAT RIGHT SIDE FLOAT

n. To **increase** float (lighten header), turn bolts (H) and (J) **clockwise**.

NOTE

Loosen jam nuts on adjuster bolts before adjusting, and re-tighten once complete.

o. To **decrease** float (increase header weight), turn bolts (H) and (J) **counterclockwise**.

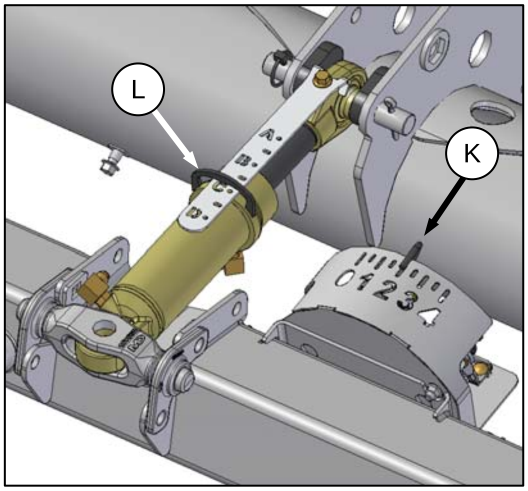
p. Use the following guidelines when adjusting float:

1. For **Single Knife Headers**: Adjust the float so the wrench reading is equal for both sides.
2. For **40 and 45 ft. Double Knife Headers**: Adjust the float so that torque settings are equal for both sides, and then loosen both right side spring bolts two turns.
3. Turn each bolt pair equal amounts. After adjustment has been made, repeat torque wrench reading procedure.
4. To avoid frequent breakage of sickle components, scooping soil, or soil build-up at cutterbar in wet conditions, header float should be set as light as possible without causing excessive bouncing.
5. With a light float setting, it may be necessary to use a slower ground speed to avoid excessive bouncing and leaving a ragged cut.
6. The stabilizer wheels may be used in conjunction with float to minimize bouncing at the header ends and control cut height when cutting off the ground. Refer to Section 7.9.1 *Cutting Height* for details.

NOTE

If adequate header float cannot be achieved using all of the available adjustments, an optional heavy duty spring is available. See your MacDon Dealer or Parts Catalog for ordering information.

7.9.2.3 Setting Feeder House Height and Header Angle



a. Adjust feeder house height while watching float indicator (K) to set cutterbar down force (normally **2** on indicator). Lower feeder house height to increase ground pressure (decrease float). Indicator reading will increase.

NOTE

Installation of the auto header height controller attachment is recommended for cutting on the ground if the combine is equipped to interface with it.

b. When cutting on ground, adjust header angle to achieve desired stubble height. Header angle indicator (L) indicates **A** for shallowest angle/higher stubble, and **D** for steepest angle/lower stubble.

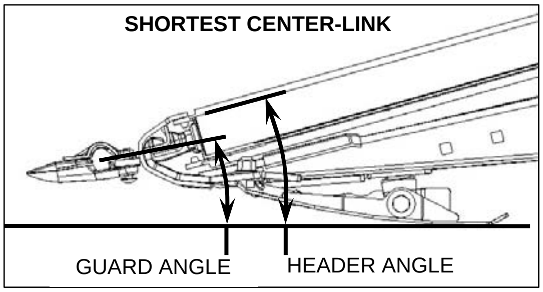
c. Decrease header angle to minimize pushing soil.

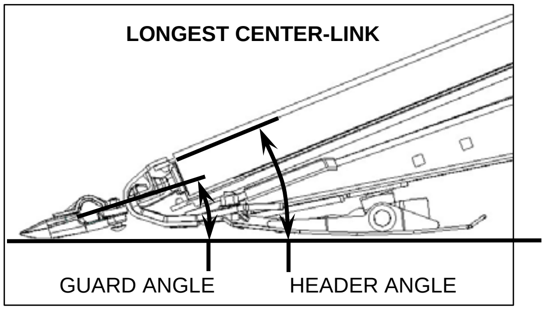
NOTE

Header angle and reel fore-aft position changes do not significantly affect header float (downforce).

7.9.3 Header Angle

Header angle is the angle between the drapers and the ground, and is adjustable to accommodate crop conditions and/or soil type.





Guard angle is similar to header angle which is the angle between the guard upper surface and the ground. Refer to illustration above.

Flatter header angles are recommended for normal crop conditions and for stony ground because it minimizes sickle section breakage and reduces soil scooping or build-up at the cutterbar in wet conditions.

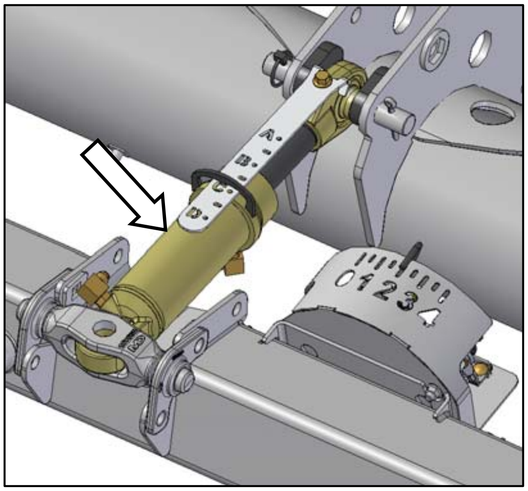
Steeper angles are recommended in downed crops for better lifting action, or for cutting close to the ground in soybeans for example.

Refer to Section 7.8.1 Header Settings for recommended header angle in specific crops and crop conditions.

The following table summarizes the adjustment range:

HEADER SIZE (FT)	DRAPER ANGLE	GUARD ANGLE
20 and 25 ft.	13.0°–18.4°	7.0°–12.4°
30, 35, 40 and 45 ft.	13.0°–18.4°	2.0°–7.4°

7.9.3.1 Angle Adjustment



The header angle is varied by adjusting the length of the center-link between the combine adapter and the header.

Refer to your Combine Operator’s Manual for adjusting the header angle.

7.9.4 Reel Speed

Reel speed affects feeding of crop into the sickle and onto the drapers, as well as the smoothness and evenness of the delivered crop.

Operating the reel too fast or too slow relative to ground speed will cause bunching. At the proper speed, the reel discs should appear to be being driven by the ground.

- If they look like they are skidding relative to ground, the reel is turning too slow.
- If they look like they are spinning excessively relative to the ground, reel speed may be too fast.

In standing crop, reel speed should be just faster than or equal to ground speed, sweeping crop across the sickle.

Flattened crop or a crop that is leaning away from the cutterbar requires a higher reel speed in relation to ground speed. This can be achieved by increasing reel speed, decreasing ground speed, or both.

Excessive shattering of grain heads or crop loss over the header back tube may be indications that reel speed is too fast. Excessive reel speed causes undue wear of reel components and unnecessary load on reel drive, resulting in uneven reel motion.

Generally, 9-bat reels can effectively operate at lower reel speed, while minimizing crop loss in shatter prone crops.

Refer to Section 7.8.1 Header Settings for recommended reel speeds in specific crops and crop conditions.

The reel speed is adjustable with the controls in the combine cab. Refer to your Combine Operator's Manual for adjustment details.

7.9.4.1 Optional Reel Drive Sprockets

MACHINE HYDRAULICS	COMBINE	APPLICATION	DRIVE SPROCKET
All	All	Standard	19 Tooth
2000–2100 psi (13.79–14.48 MPa)	AGCO Transverse Rotary.	Combining Down Rice	10 Tooth
2500 psi (17.24 MPa)	CAT 500, 700 Series. AGCO Axial Rotary.		12 Tooth
3000 psi (20.68 MPa)	NH CR, CX. Case IH 7010, 8010, 7120, 8120, 88 Series.		14 Tooth
Low Flow under 11 gpm	---	Combining Light Crops Above 10 mph (16 km/hr)	21 Tooth

Sprockets are available as an option to the factory installed sprocket. See your MacDon Dealer Parts Department to order sprockets.

Refer to Section 8.12.5 Reel Drive Sprocket for installation details.

7.9.5 Ground Speed

Ground speed should be such that the sickle can cut crop smoothly and cleanly, while giving the desired delivery of material to the opening. Excessive ground speed results in ragged cutting.

In tough-to-cut crops, reduce ground speed to reduce loads on cutting components and drives.

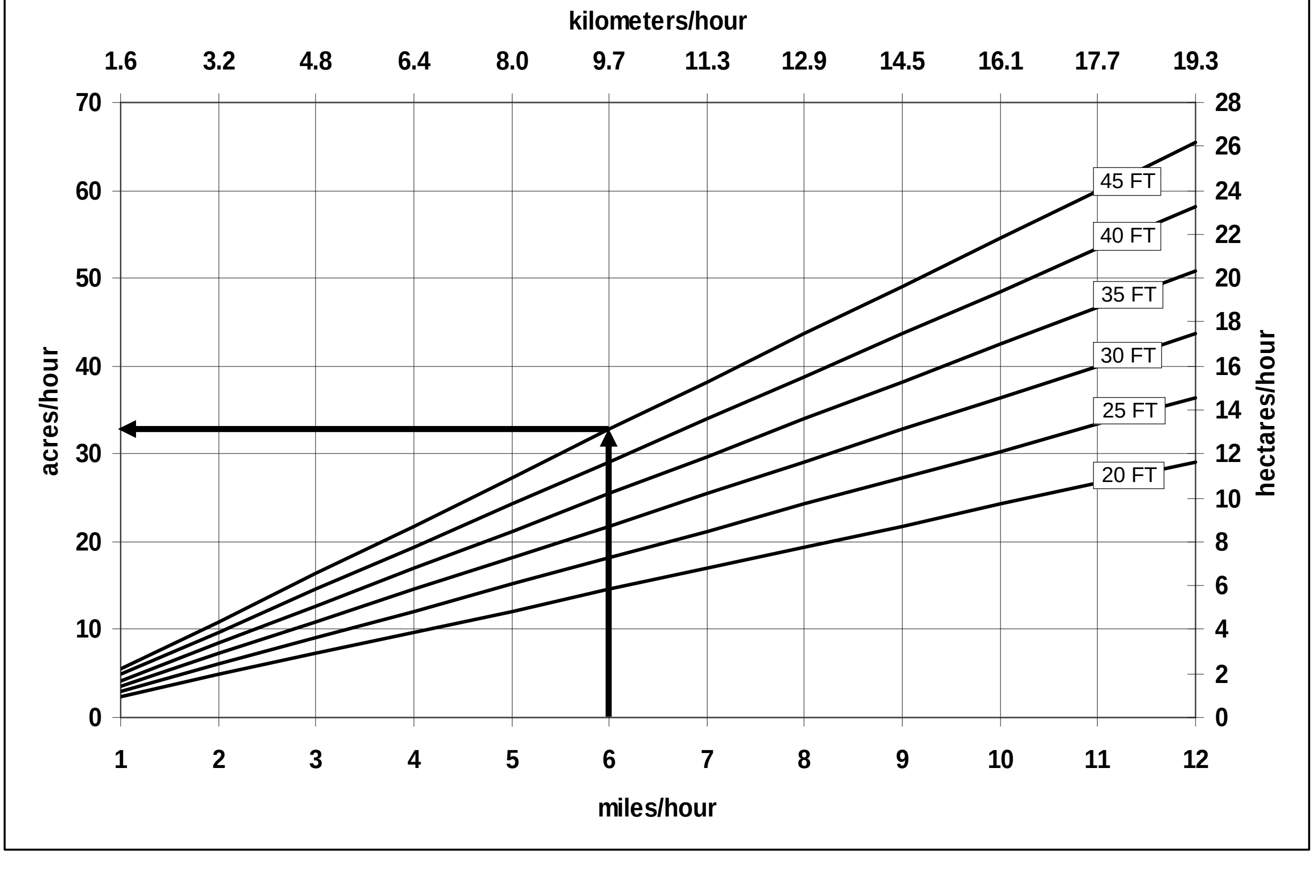
When cutting very light crops (e.g. short soybeans), ground speed may have to be reduced to allow reel to pull in small and short plants.

Start at 3.0–3.5 mph (4.8–5.8 km/h), and adjust as required.

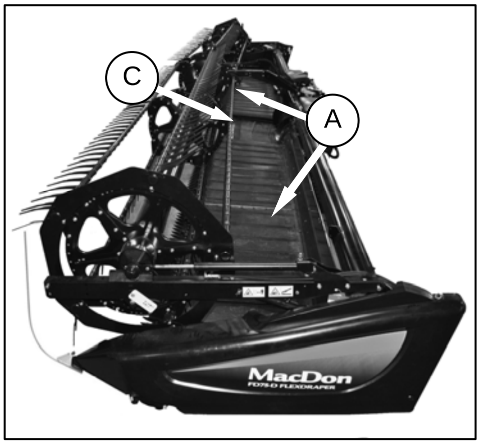
Higher ground speeds require heavier float settings to prevent excessive bouncing that would result in increased cutting component damage. In most cases, as ground speed is increased, draper and reel speed should be increased to handle the extra material.

The chart below indicates the relationship between ground speed and area cut for the four header sizes.

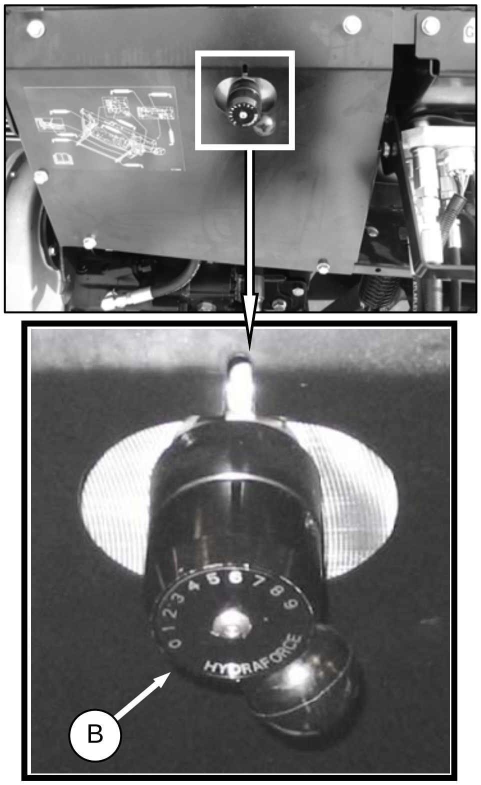
Example shown below: At a ground speed of 6 miles per hour (9.7 km/h) with a 45 ft. header, the area cut in one hour would be approximately 33 acres (13.4 hectares).



7.9.6 Draper Speed



The speed of the header/side drapers (A) is adjusted at the flow control (B) on the CA25 adapter. The control has values 0–9 on the barrel with a notch on the hydraulic compartment cover to set the desired draper speed.



a. The draper speed control is factory-set to ‘**6’**. This setting should satisfy normal crop feeding.

b. If a different draper speed is desired, shut down the combine, and adjust the control accordingly.

Refer to the Section 7.8.1 *Header Settings* for guidelines on setting the proper draper speed for optimum feeding of the crop

NOTE

If sufficient draper speed cannot be achieved, a possible cause is low relief pressure. Refer to the Technical Service Manual for checking and adjusting relief pressure.

The adapter feed draper (C) is driven by the adapter mounted hydraulic pump. The speed is factory-set, and cannot be adjusted.

7.9.7 Knife Speed

The header knife drive is driven by the adapter mounted hydraulic pump. The knife drive speed is factory-set for a feeder house speed of 575 rpm for CNH and John Deere CA25 Adapters, and 780 rpm for AGCO and Lexion CA25 Adapters.

IMPORTANT

For variable speed feeder houses, this will be the **minimum** speed setting.

IMPORTANT

To operate variable speed feeder house at greater than minimum speed, flow to the knife drive motor must be reduced to prevent excessive speeds which could result in premature knife failure.

IMPORTANT

Check that the knife speed is in the range shown in the chart below using the procedure that follows. If adjustment is required, contact your MacDon Dealer or refer to the Header Technical Manual.

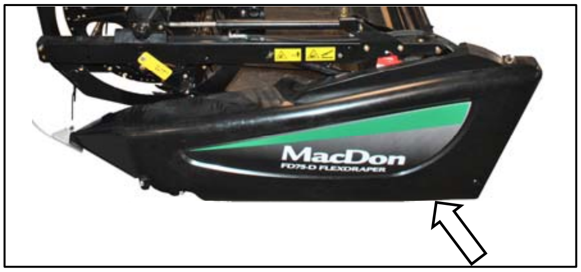
HEADER SIZE (FT)	RECOMMENDED KNIFE DRIVE SPEED RANGE (RPM)	
	SINGLE KNIFE DRIVE (SKD)	DOUBLE KNIVE DRIVE (DKD)
20	N/A	700–850
25	600–725	
30	600–700	600–750
35	550–650	
40	525–600	550–700
45	N/A	

Refer also to Section 7.8.1 Header Settings for recommended knife speeds in specific crops and crop conditions.

WARNING

Stop combine engine, and remove key before making adjustments to machine. A child or even a pet could engage the drive.

a. Stop combine engine, and remove key from ignition.

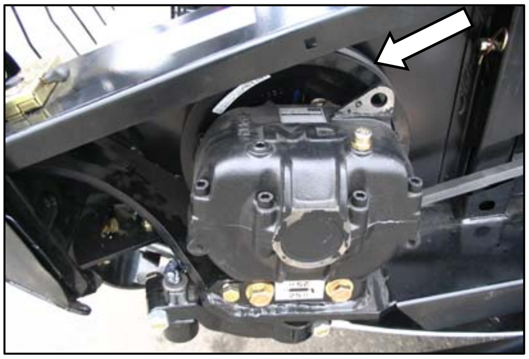


b. Open the LH endshield.

WARNING

Ensure bystanders are clear before starting.

c. Start combine engine, engage the header drive, and run the combine at operating rpm.



d. Have someone check the rpm of the sickle drive box pulley using a hand held tachometer.

e. Shut down the combine.

f. Compare actual pulley rpm with the values in the chart in the previous column.

g. If adjustment to the sickle drive box pulley rpm is necessary, contact your MacDon Dealer or refer to the Header Technical Manual.

7.9.8 Reel Height

Depending on crop height, adjust reel height to carry material through the sickle onto the drapers. Operate combine hydraulics as required. Refer also to Section 7.9.9 Reel Fore-Aft Position.

REEL HEIGHT CHART	
CROP CONDITION	**REEL POSITION**
Combining Down Rice	Down (Also Increase Reel Speed and/or Cam Setting)
Bushy or Heavy Standing	Up

Indications that reel may be too low are:

- crop loss over the header back tube,
- disturbance of crop on the drapers by the reel fingers, or
- crop being pushed down by the tine tubes.

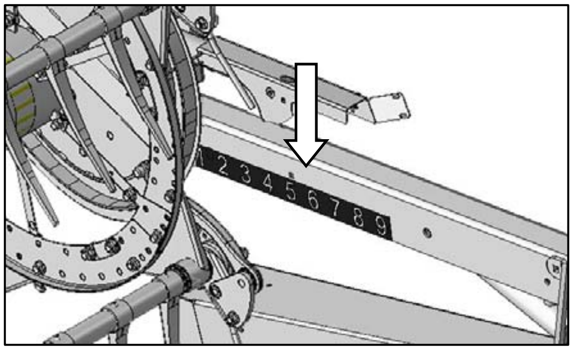
IMPORTANT

Maintain adequate clearance to prevent fingers contacting the knife or the ground. Refer to Section 8.12.1 Reel Clearance to Cutterbar.

Refer to Section 7.8.1 Header Settings for recommended reel height in specific crops and crop conditions.

7.9.9 Reel Fore-Aft Position

Reel position has been found to be a critical factor in achieving good results in adverse conditions. The reel position is factory-set for average straight standing crop, and can be adjusted forward and backward for different crop conditions.



A decal is provided on the reel right support arm for identifying a preferred position. The back edge of the reel cam disc is the gauge indicator.

Refer to Section 7.8.1 Header Settings for recommended reel positions in specific crops and crop conditions.

7.9.9.1 Hydraulic Adjustment: Fore-Aft

h. Select the fore-aft adjust mode on the selector switch in the cab.

i. Operate the hydraulics to move the reel to the desired position, again using the gauge as a reference.

j. Check reel clearance to cutterbar after making changes to cam setting. Refer to Section 8.12.1 Reel Clearance to Cutterbar for measurements and adjustment procedures.

IMPORTANT

Operating with the reel too far forward can cause the fingers to contact the ground before the cutterbar. Lower the skid shoes or adjust header tilt as required when operating with the reel in this position, otherwise, damage to the fingers will occur.

(continued next page)

7.9.9.2 Fore-Aft Cylinder Position: Double Reel

The reel can be moved approximately nine inches further aft by re-positioning the cylinders on the reel arms. This may be desirable when straight-combining canola.

a. Position reel fully aft with support arms horizontal. Stop engine, and remove key.

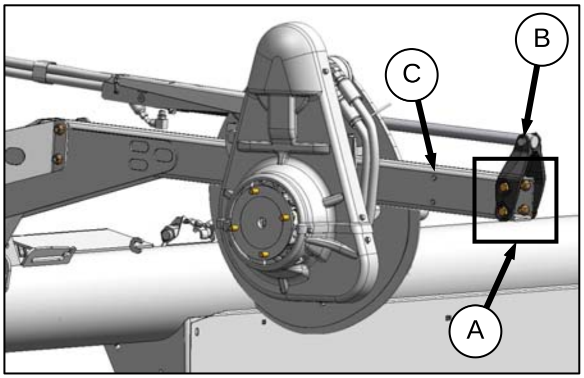
WARNING

Stop combine engine, and remove key before making adjustments to machine. A child or even a pet could engage the drive.

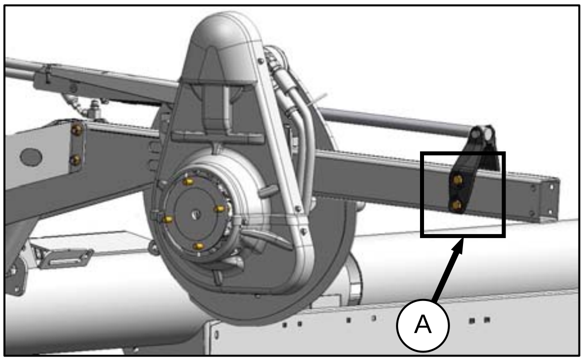
b. Re-position **center arm cylinder** as follows:

NOTE

Reel components are not shown for clarity.



FORWARD POSITION



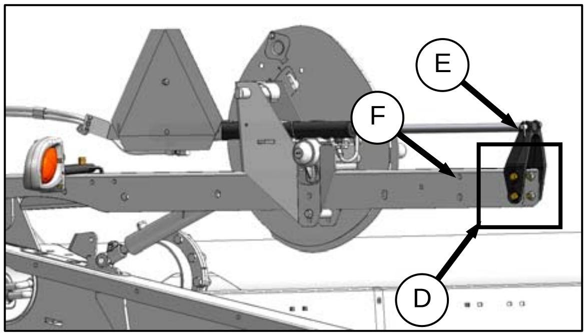
REARWARD POSITION

1. Remove four bolts (A) securing cylinder bracket (B) to reel arm.
2. Push reel back until bracket (B) lines up with the aft set of holes (C).
3. Re-install the four bolts (A) to secure bracket to reel arm at new position.

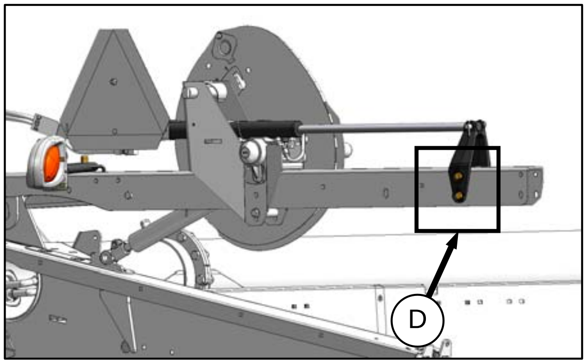
c. Re-position right arm cylinder as follows:

NOTE

Reel components are not shown for clarity.



FORWARD POSITION



REARWARD POSITION

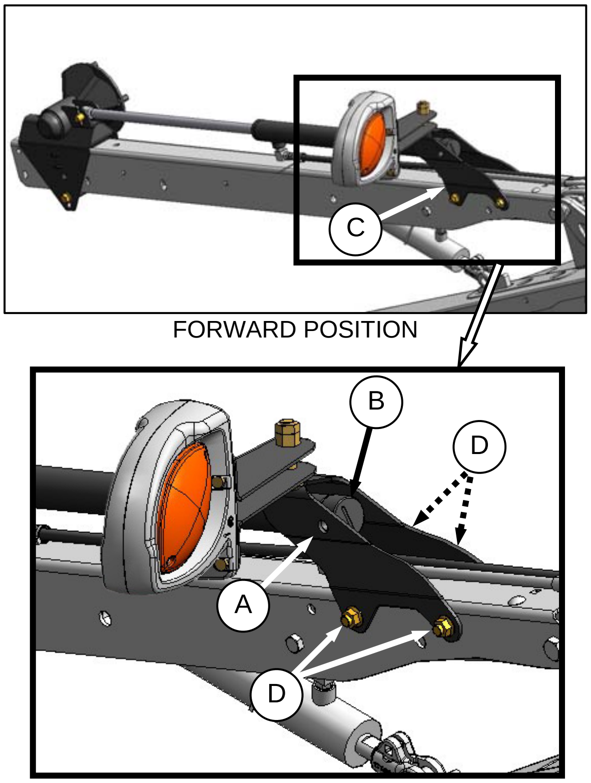
1. Remove four bolts (D) securing cylinder bracket (E) to reel arm.
2. Push reel back until bracket (E) lines up with the aft set of holes (F).
3. Re-install the four bolts (D) to secure bracket to reel arm at new position.

(continued next page)

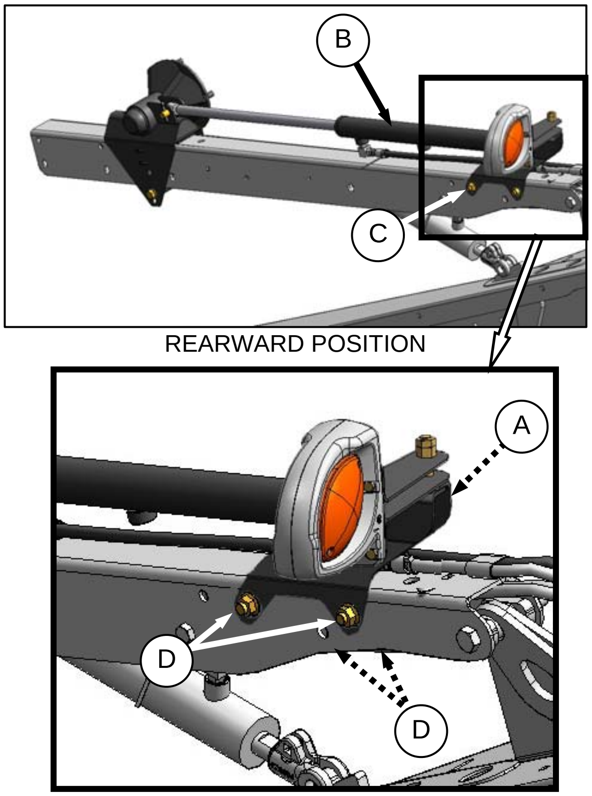
d. Re-position **left arm cylinder** as follows:

NOTE

Reel components are not shown for clarity.



FORWARD POSITION



REARWARD POSITION

1. Remove pin (A) securing cylinder (B) to bracket/light assembly (C).
2. Remove bolts (D) securing bracket (C) to reel arm and remove bracket/light assembly.
3. If necessary, remove plastic tie securing harness to bracket or reel arm.
4. Swivel light to working position as shown.
5. Re-position bracket/light assembly (C) on reel arm as shown, and re-install the four bolts (D) to secure bracket to reel arm. Tighten bolts.
6. Push reel back, and re-install cylinder (B) to bracket with pin (A). Secure pin with cotter pin.
7. Secure light harness to bracket with plastic tie wrap.

e. Check reel clearance to back sheet, upper cross auger (if installed) and reel braces.

f. Adjust reel tine pitch if required. Refer to Section 7.9.10 Reel Tine Pitch, or Section 8.12.1 Reel Clearance to Cutterbar for adjustment procedures.

7.9.9.3 Fore-Aft Cylinder Position: Single Reel

The reel can be moved approximately nine inches further aft by re-positioning the cylinders on the reel arms. This may be desirable when straight-combining canola.

a. Position reel fully aft with support arms horizontal. Stop engine, and remove key.

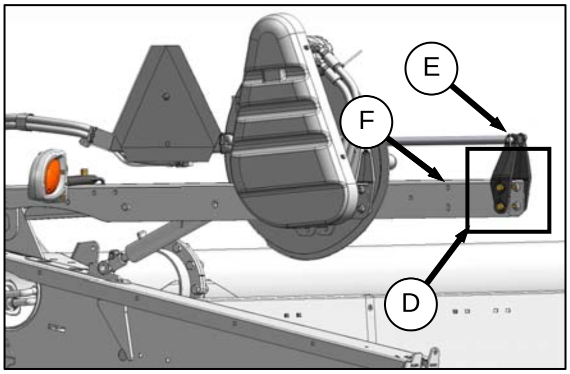
WARNING

Stop combine engine, and remove key before making adjustments to machine. A child or even a pet could engage the drive.

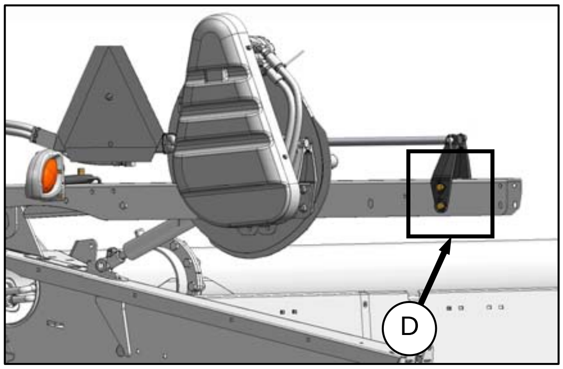
b. Re-position **right arm cylinder** as follows:

NOTE

Reel components are not shown for clarity.



FORWARD POSITION



REARWARD POSITION

1. Remove four bolts (D) securing cylinder bracket (E) to reel arm.
2. Push reel back until bracket (E) lines up with the aft set of holes (F).
3. Re-install the four bolts (D) to secure bracket to reel arm at new position.

c. Re-position **left arm cylinder** as per Section 7.9.9.*2* Fore-Aft Cylinder Position: Double Reel, step d.

d. Check reel clearance to back sheet, upper cross auger (if installed) and reel braces.

e. Adjust reel tine pitch if required. Refer to Section 7.9.10 Reel Tine Pitch, or Section 8.12.1 Reel Clearance to Cutterbar for adjustment procedures.

7.9.10 Reel Tine Pitch

IMPORTANT

The following describes the concept and operational guidelines of the pickup reel. Please read carefully before operating the machine.

7.9.10.1 Concept

The pickup reel is designed to pick up flattened and severely lodged crops.

It is not always necessary to increase the tine pitch (higher cam setting) to pick up crops that are lodged, but rather, the cam settings are mainly used to determine how the crop will get delivered to the drapers.

The position of the fingers relative to ground (tine pitch) is not significantly affected by the cam setting. For example, the cam position range is 33 degrees, but the corresponding finger pitch range is only 5 degrees at the lowest point of reel rotation.

For best performance, use the minimum cam setting that will deliver the crop past the rear edge of the cutterbar and onto the drapers.

7.9.10.2 Operating Guidelines

The following outlines the function of each cam setting and includes guidelines for set-up in various crop conditions. The setting numbers are visible above the slots on the cam disc. Refer to Section 7.9.10.*3* Cam Adjustment.

- **Cam Position 1:** Delivers the most even crop flow onto the drapers without fluffing up or disturbing the material. The crop is released quite close to the cutterbar, and works best with the cutterbar on the ground. Some crops will not be delivered past the cutterbar when the cutterbar is raised off the ground, and the reel is pushed forward. Initially, have the reel speed set about equal to the ground speed.
- **Cam Position 2:** Recommended starting position for most crops and conditions. This setting gives a fingertip speed approximately 20% faster than the reel speed.
    - o If crops tend to stall on the cutterbar with the reel in a forward position, the cam setting should be increased to push the crop past the rear edge of the cutterbar.
    - o If the crop getting fluffed, or the flow across the drapers is disrupted, the cam setting should be decreased.
- **Cam Positions 3 and 4:** Mainly used to leave long stubble. Allows the reel to reach forward and lift the crop aross the knife and onto the drapers. The further forward the reel, the higher the cam setting should be.
- **Cam Position 4** would be used with the reel being fully forward to leave maximum amount of stubble in lodged crops. This setting gives a finger tip speed approximately 30% faster than the reel speed.
- **Cam Position 4, Header Angle At Maximum, and Reel Fully Forward** provides maximum amount of reel reach below cutterbar to pick up lodged crops, and gives a finger tip speed approximately 35% faster than the reel speed.

Cutting height is set to approximately 8 inches (203 mm) to leave a significant amount of stubble. In damp materials such as rice, it is possible to double ground speed because the amount of material that is being cut is less.

NOTE

High cam settings with the reel fore-aft position at 4–5, severely decrease the draper capacity because the reel disrupts crop flow across the drapers. The fingers are still engaged in the crop that is moving on the drapers.

High cam settings are recommended only with the reel at or close to full forward settings.

IMPORTANT

The reel to cutterbar clearance should always be checked following adjustments to reel tine pitch and reel fore-aft position.

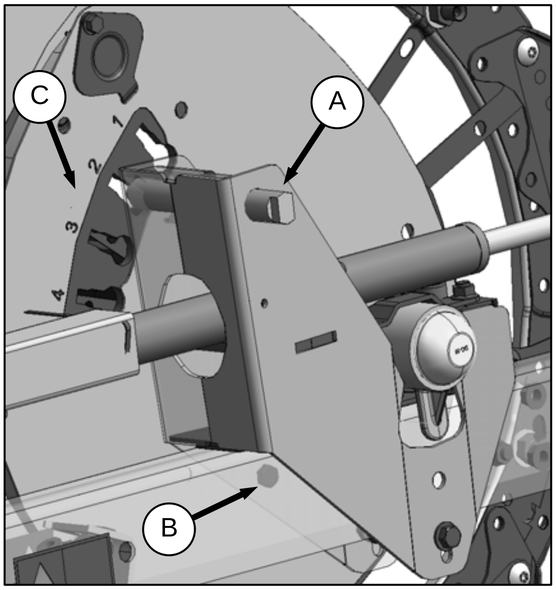
Refer to Section 8.12.1 Reel Clearance to Cutterbar.

Refer to Section 7.8.1 Header Settings for recommended reel tine pitch in specific crops and crop conditions.

7.9.10.3 Cam Adjustment

WARNING

Stop combine engine, and remove key before making adjustments to machine. A child or even a pet could engage the drive.



a. Using a 3/4 in. wrench, turn the cam latch pin (A) counterclockwise to release the cam disc.

IMPORTANT

Secure cam position before operating machine.

b. Use the wrench on bolt (B) to rotate cam disc, and align latch pin (A) with desired hole (**1 to 4**) at (C) in cam disc.

NOTE

Bolt (B) is through cam disc. Some parts shown transparent for visibility.

c. Turn latch pin (A) clockwise to engage and lock cam disc.

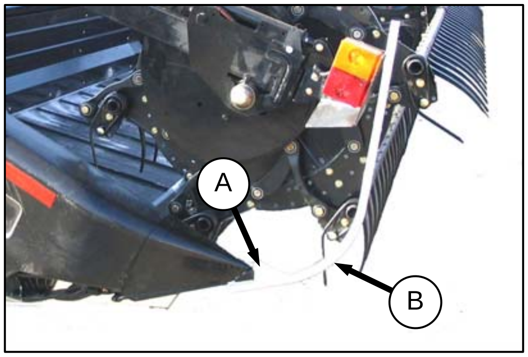
d. Repeat above procedure for the other reel.

7.9.11 *Crop Divider Rods*

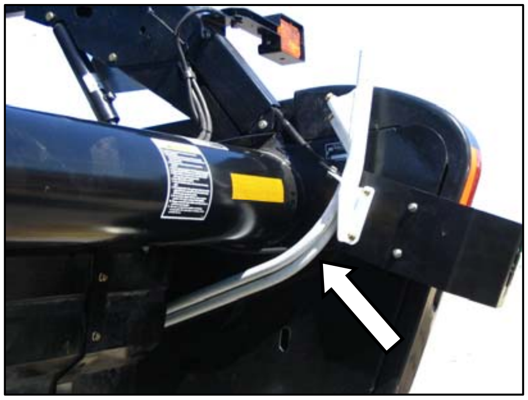
Divider rods are removable. The removable divider rods are suitable when crop is down, while the crop divider without rods is better in standing crops. See chart below for recommended rod use for various crops and Section 7.8.1 Header Settings for recommended reel height in specific crops and crop conditions.

WITH DIVIDER RODS	WITHOUT DIVIDER RODS
Lodged Cereal Peas Lentils Canola Winter Forage Sudan Grass Flax Alfalfa Grass Seed Soybeans	Standing Cereal Edible Beans Soybeans Rice Milo

Remove divider rods as follows:



a. Loosen bolt (A), and remove rod (B).



b. Store both rods on the inboard side of the right endsheet.

7.9.12 *Crop Dividers*

The crop dividers are removable to suit installation of vertical knives, and to decrease transport width.

DANGER

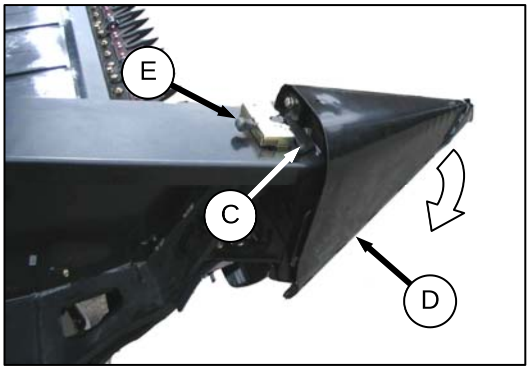
To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key, and engage lift cylinder stops before going under machine to remove crop dividers or for any reason.

7.9.12.1 Removal

Headers with Latch Option

a. Raise header and engage header lift cylinder lockouts. Refer to your Combine Operator's Manual. Stop engine, and remove key.

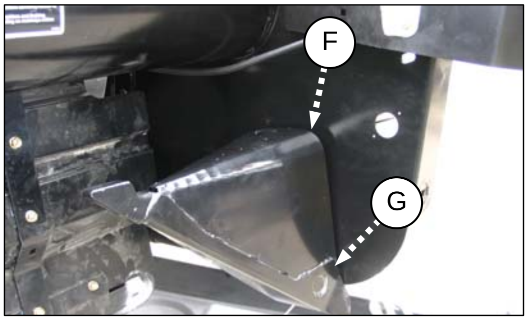
b. Open header endshields. See 7.2.3 Endshields.



c. Lift safety lever (C).

d. Hold onto divider (D), push lever (E) to open latch and lower divider.

e. Lift divider off endsheet, and store as follows:



1. Locate pin (F) on divider in hole in endsheet at location shown.
2. Lift divider, and locate lugs (G) on divider into bracket on endsheet. Ensure lugs engage bracket.

f. Close header endshield.

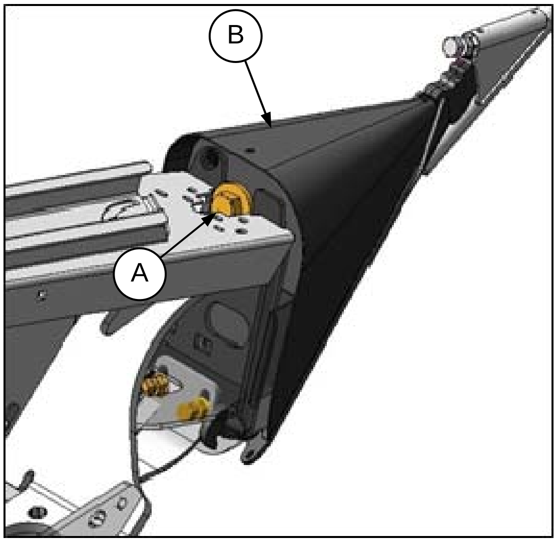
(continued next page)

Headers Without Latch Option

a. Raise header, and engage lift cylinder lockouts. Refer to combine operating manual.

b. Open header endshield. Refer to Section 7.2.3 Endshields.

c. Remove bolt (A).



d. Lower divider (B).

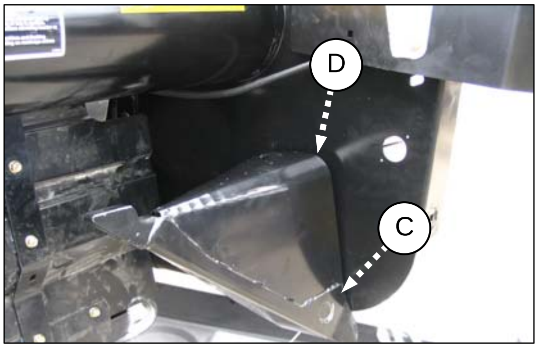
e. Lift divider off endsheet.

f. Close header endshield.

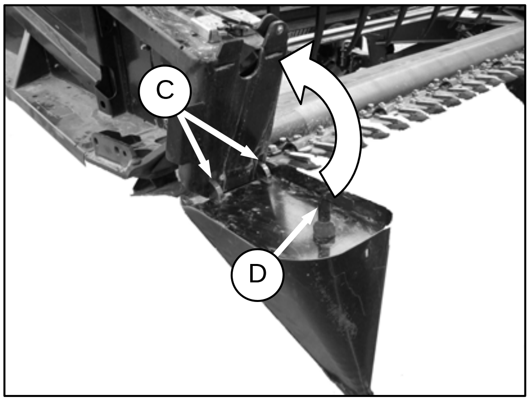
7.9.12.2 Installation

Headers with Latch Option

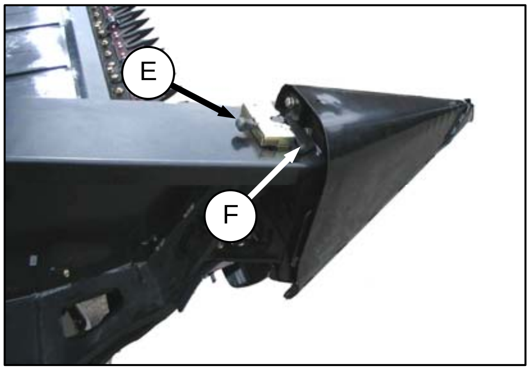
a. Open header endshield.



b. At divider storage location, lift divider to disengage lugs (C) at lower end, and then lower it slightly to disengage pin (D) from endsheet.

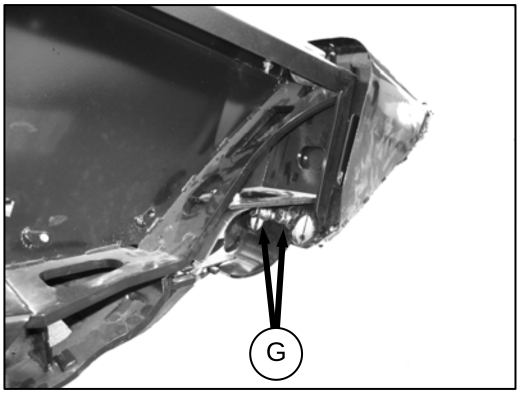


c. Position crop divider as shown by locating lugs (C) in holes in endsheet.



d. Lift forward end of divider until pin (D) at top of divider engages and closes latch (E).

e. Push safety lever (F) down to lock pin in latch.



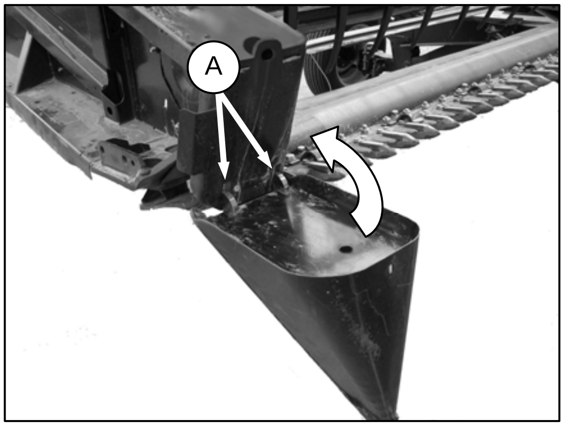
f. Check that divider does not move laterally. Adjust bolts (G) as required to tighten divider and remove lateral play when pulling at divider tip.

g. Close endshield.

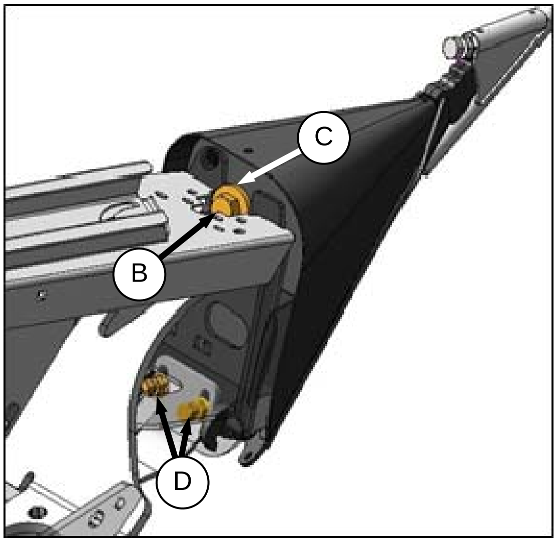
(continued next page)

Headers Without Latch Option

a. Open endshield.
b. Remove from storage.

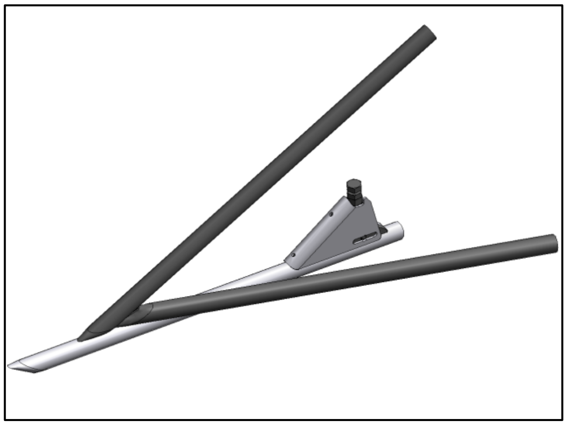


c. Position crop divider as shown by locating lugs (A) in holes in endsheet.



d. Lift forward end of divider, and install bolt (B) and special stepped washer (C) (step towards divider). Tighten bolt.
e. Check that divider does not move laterally. Adjust bolts (D) as required to tighten divider and remove lateral play when pulling at divider tip.
f. Close endshield.

7.9.13 Rice Dividers



Optional special rice dividers can be installed and used when required. See Section 10.10 RICE DIVIDER RODS.

The installation and removal procedures are the same as for the standard crop dividers.

7.10 KNIFE HEAD SHIELD

The shield attaches to the endsheet, and reduces the knife head opening to prevent cut crop from accumulating in knife head cut-out creating plugging.

It is recommended that the shield(s) be installed when harvesting severely lodged crop or any crop condition where plugging occurs at knife head cut-out.

The shield(s) and mounting hardware are available from your MacDon Dealer, and are installed as follows:

IMPORTANT

Shields should be removed when cutting with cutterbar on ground in muddy conditions. Mud may pack into cavity behind shield, and cause sickle drive box failures.

NOTE

Shields are slightly different depending on header size and guard configuration. Ensure proper shield is used. See Parts Catalog for proper replacement parts.

a. Raise reel fully, lower header to ground, shut down combine, and remove key.

CAUTION

Always engage reel props before working under reel.

b. Engage reel arm locks.

DANGER

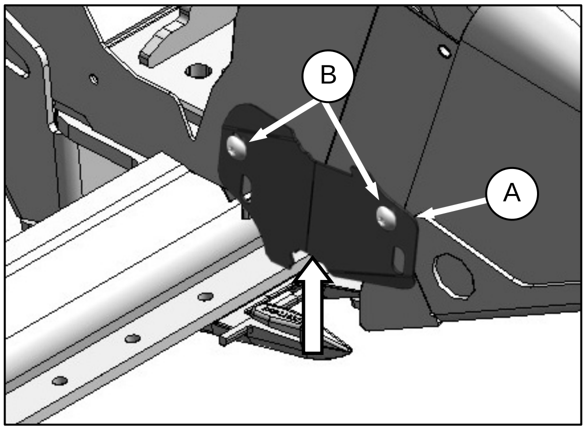
To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key, and engage lift cylinder stops before going under machine.

NOTE

The knife head shield is supplied in flattened form, and can be bent to suit installation on pointed or stub guard cutterbars, and on double knife headers.

CAUTION

Wear heavy gloves when working around or handling sickles.



c. Locate knife head shield (A) against endsheet as shown.

d. Orient the shield so that cutout matches profile of knife head and/or hold-downs.

e. Bend shield along slit to conform to endsheet.

f. Place shield on endsheet, align mounting holes, and install two 3/8 in. x 1/2 Torx® head bolts (B).

g. Snug up bolts just enough so that shield can be adjusted as close as possible to knife head.

h. Manually rotate sickle drive box pulley to move knife, and check for areas of contact between the knife head and shield.

i. If required, adjust shield to avoid interference with the knife.

j. Tighten bolts.

7.11 HEADER LEVELLING

The adapter is factory-set to provide the proper level for the header, and should not normally require adjustment.

If the header is not level, perform the following checks prior to adjusting the leveling linkages.

IMPORTANT

The adapter float springs are not used to level the header.

- Check combine tire pressures.
- Check that the combine feeder house is level. Refer to your Combine Operator's Manual.
- Check that top of adapter is level with combine axle.

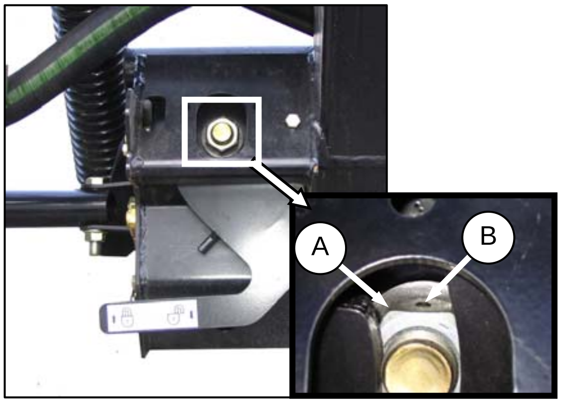
Make fine adjustments to header leveling as follows:

a. Park combine on level ground.

b. Check float lock is disengaged (so header can float).

c. Check and set float adjustment. Refer to Section 7.9.2 Header Float.

d. Set header approximately 6 inches (150 mm) off ground, and check that float linkage is against down stops. Note high and low end of header.



e. Adjust level with nut (A) at each float lock as follows. Use small adjustments (1/4–1/2 turn), and adjust each side equally but in opposite directions:

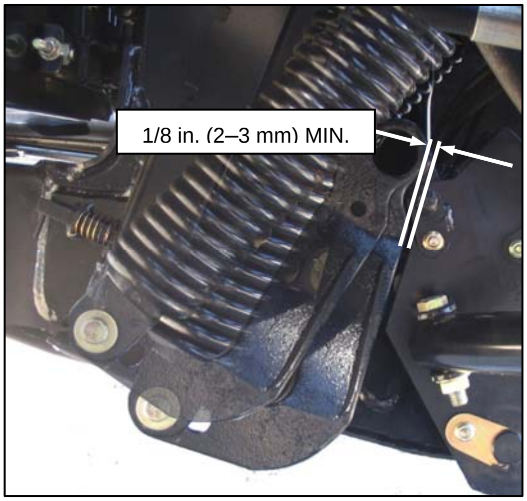
NOTE

Set screw (B) does not require loosening for adjustments up to one-half turn of nut (A).

1. Turn low-side nut **clockwise** to raise header.
2. Turn high-side nut **counterclockwise** to lower header.

NOTE

Adjustment of more than two turns in either direction may adversely affect header float.



Always be sure there is a minimum 1/8 inch (2 to 3 mm) clearance between frame and back of bellcrank lever as shown.

NOTE

Float does not require adjustment after levelling header.

7.12 UNPLUGGING CUTTERBAR

a. Stop forward movement of machine, and disengage header drives.

b. With header on ground, back up several feet, and engage header drive clutch.

CAUTION

Lowering rotating reel on a plugged cutterbar will damage the reel components.

c. If plug does not clear, disengage header drive clutch, and raise header fully.

WARNING

Stop engine, and remove key before removing plugged material from header. A child or even a pet could engage the drive.

d. Shut off engine, remove key, and engage park brake.

e. Engage header lift cylinder locks.

WARNING

Wear heavy gloves when working around sickle.

f. Clean off cutterbar by hand.

NOTE

If sickle plugging persists, see Section 9 TROUBLESHOOTING.

7.13 UNPLUGGING ADAPTER

a. Stop forward movement of the machine, and disengage header drives.

b. Raise header slightly off the ground, and raise the reel.

c. Activate the header reverse drive control on combine, and engage the header drive.

d. When plug clears, disengage header drive, and deactivate the reverse switch.

e. Re-engage header drive.

7.14 UPPER CROSS AUGER

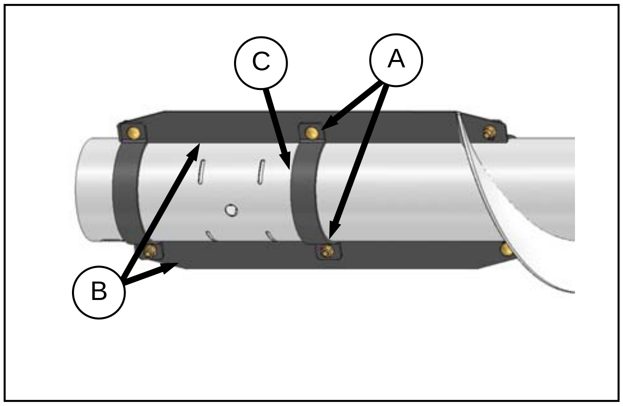
The cross auger helps deliver very bulky crops across the header onto the windrow or into the combine.

Removable beater bars assist in delivering material through the header opening, but if wrapping occurs, the beater bars can be removed as follows:

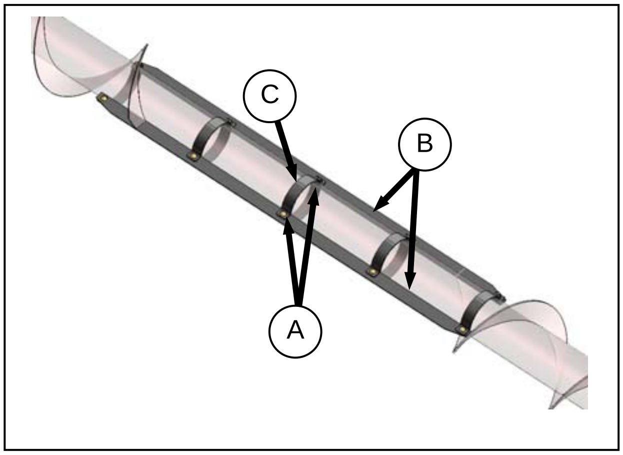
WARNING

Stop engine, and remove key before removing plugged material from header. A child or even a pet could engage the drive.

a. Lower header to ground, shut down combine, and remove key.



DOUBLE REEL HEADERS



SINGLE REEL HEADERS

b. Remove bolts (A) securing bars (B) and clamps (C) to auger tubes, and remove bars and clamps.

To re-install the beater bars:

a. Locate one beater bar (B) with one clamp set (C) on auger tube, and loosely secure with carriage bolt (A) and nut. Bolt head must face direction of auger rotation.

b. Locate remaining clamp sets on tube, and loosely attach to beater bar with carriage bolts and nuts. Bolt heads must face direction of auger rotation.

c. Position second beater bar in clamps, and secure with carriage bolts and nuts.

d. Tighten bolts.

7.15 TRANSPORTING HEADER

WARNING

Do NOT drive combine with header attached on a road or highway at night, or in conditions which reduce visibility, such as fog or rain. The width of the header may not be apparent under these conditions.

7.15.1 Combine

CAUTION

- **Check local laws for width regulations and lighting or marking requirements before transporting on roads.**
- **Follow all recommended procedures in your Combine Operator's Manual for transporting, towing etc.**
- **Disengage header drive clutch when travelling to and from the field.**
- **Before driving combine on a roadway, be sure flashing amber lamps, red tail lamps and head lamps are clean and working properly. Pivot amber lamps for best visibility by approaching traffic. Always use these lamps on roads to provide adequate warning to other vehicles.**
- **Do NOT use field lamps on roads, they may confuse other drivers.**
- **Before driving on a roadway, clean slow moving vehicle emblem and reflectors. Adjust rear view mirror and clean windows.**
- **Lower the reel fully and raise header unless transporting in hills. Maintain adequate visibility and be alert for roadside obstructions, oncoming traffic and bridges.**
- **When travelling downhill, reduce speed and keep header at a minimum height. This provides maximum stability if forward motion is stopped for any reason. Raise header completely at bottom of grade to avoid contacting ground.**
- **Travel speed should be such that complete control and machine stability are maintained at all times.**

7.15.2 Towing

The header can be towed behind the combine or with the Slow Speed Transport/Stabilizer Wheel option, or on an approved header transporter. Refer to your Combine Operator's Manual, or see your MacDon Dealer.

7.15.2.1 Attaching Header To Towing Vehicle

CAUTION

- **To avoid bodily injury and/or machine damage caused by loss of control:**
- **Weight of towing vehicle must exceed header weight to ensure adequate braking performance and control.**
- **Do NOT tow with any highway capable vehicle. Use only an agricultural tractor, agricultural combine, or properly configured MacDon windrower.**
- **Ensure that reel is down and fully back on support arms to increase header stability in transport. For headers with hydraulic reel fore-aft, never connect the fore-aft couplers to each other. This would complete the circuit, and allow the reel to creep forward in transport, resulting in instability.**
- **Check that all pins are properly secured in Transport position at wheel supports, hitch and cutterbar support.**
- **Check tire condition and pressure prior to transporting.**
- **Connect hitch to towing vehicle with a proper hitch pin with a spring locking pin or other suitable fastener.**
- **Attach safety hitch chain to towing vehicle. Adjust safety chain length to remove all slack except what is needed for turns.**
- **Connect header wiring harness 7-pole plug to mating receptacle on towing vehicle. (The 7-pole receptacle is available from your MacDon Dealer Parts Department).**
- **Ensure lights are functioning properly, and clean the slow moving vehicle emblem and other reflectors. Use flashing warning lights unless prohibited by law.**

7.15.2.2 Towing The Header

CAUTION

THIS IS INTENDED AS SLOW SPEED TRANSPORT.

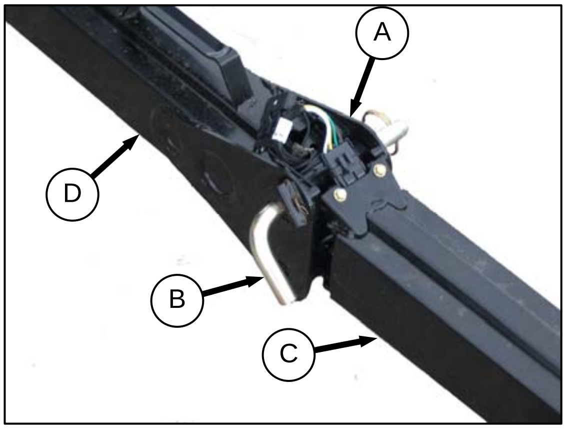
CAUTION

- **To avoid bodily injury and or machine damage caused by loss of control:**
- **Do NOT exceed 25 mph (40 km/h). Reduce transport speed to less than 5 mph (8 km/h) for corners and slippery or rough conditions.**
- **Do NOT accelerate when making or coming out of a turn.**
- **Obey all highway traffic regulations in your area when transporting on public roads. Use flashing amber lights unless prohibited by law.**

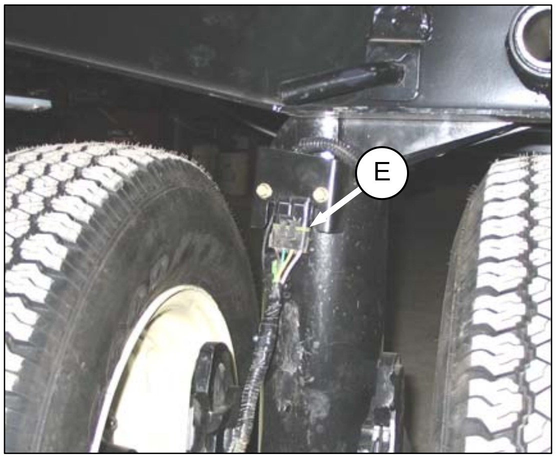
7.15.3 Converting from Transport to Field Position

a. Block the tires to prevent header rolling, and unhook from towing vehicle.

b. Remove tow-bar as follows:



1. Disconnect wiring connector (A) on tow-bar.
2. Remove pin (B) from tow-bar, and disassemble forward section (C) from aft section (D).



3. Disconnect wiring connector (E) at front wheel.

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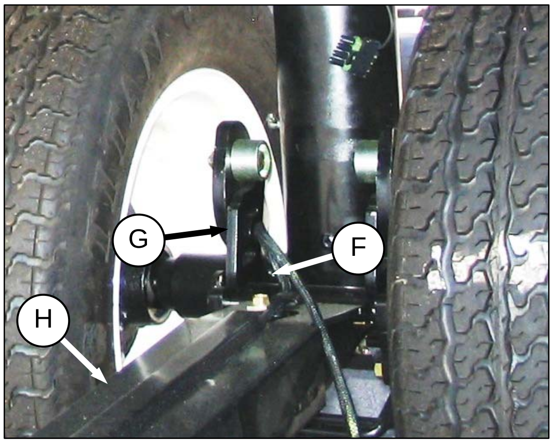


4. Remove clevis pin (F), and set aside for later installation.
5. Push latch (G), and lift tow-bar (H) from hook. Release latch.

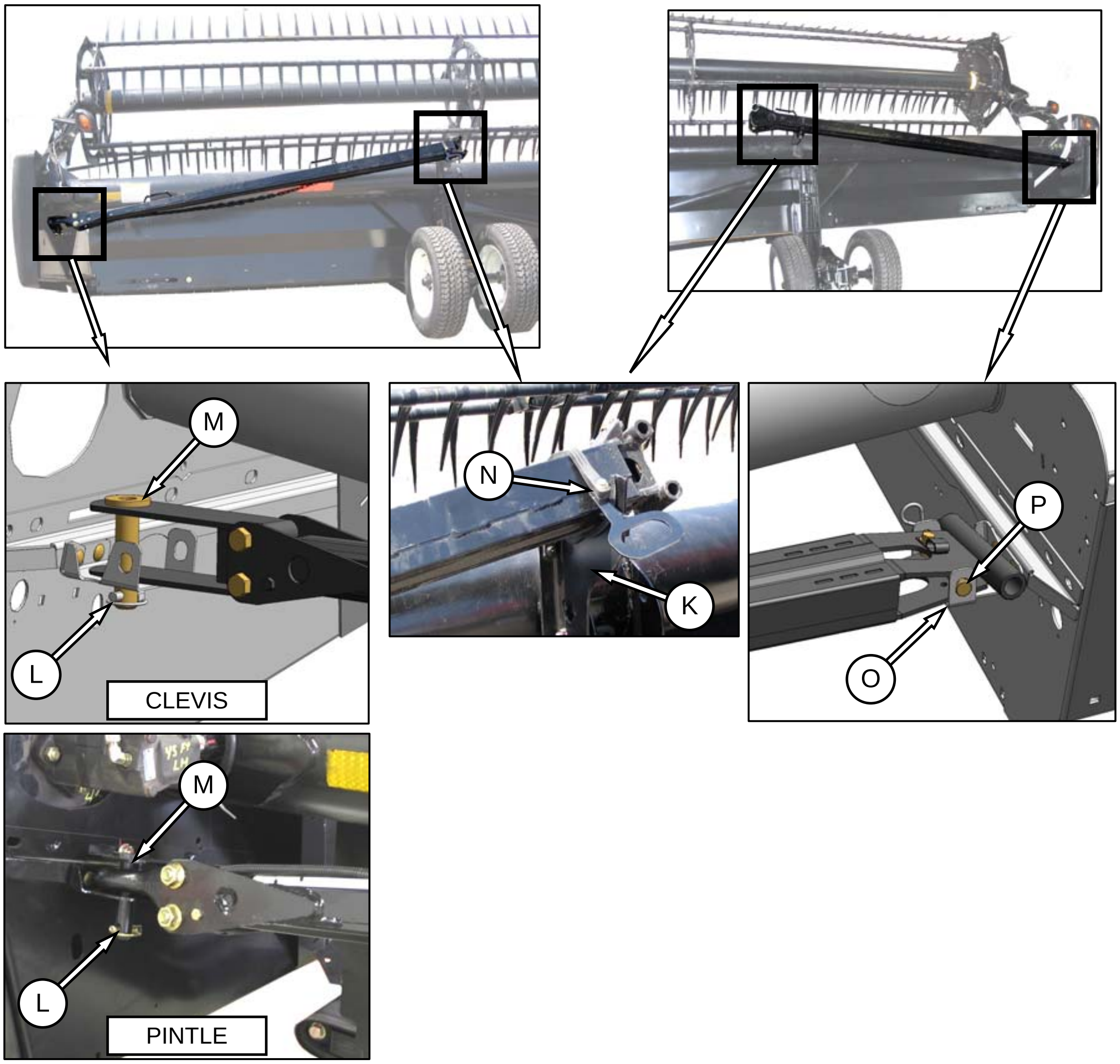
c. Store tow-bar on header as follows:

1. Locate larger end of one section of tow-bar in cradle (K) on header back-tube.
2. For clevis or pintle end of tow-bar, secure in support (L) on endsheet with hitch pin (M). Secure with lynch pin.
3. Install rubber strap (N) on cradle.
4. Similarly locate other section of tow-bar in cradle at other end of header.
5. Secure tube end in support (O) with clevis pin (P). Secure with hairpin.
6. Install rubber strap (N) on cradle.

d. Attach header to combine. Refer to Section 7.3 HEADER ATTACHMENT/DETACHMENT.

IMPORTANT

Carrying the tow-bar on the header will affect the main header float. Refer to Section 7.9.2 Header Float for adjustment procedures.



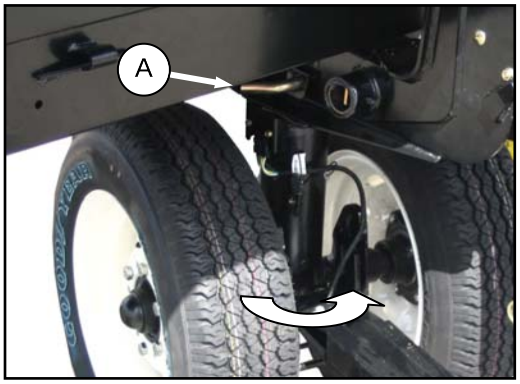
7.15.3.1 Front Wheels To Field Position

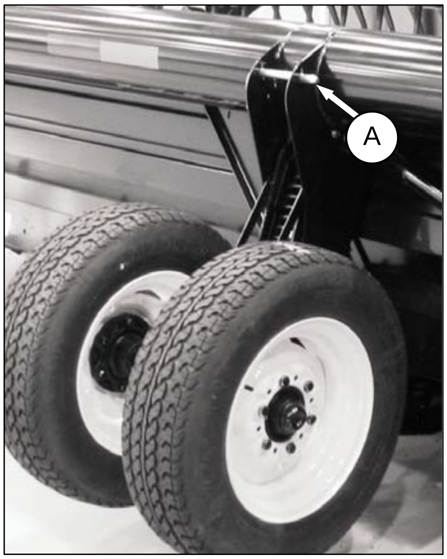
DANGER

To avoid bodily injury or death from unexpected start-up or fall of raised header, stop engine, remove key, and engage header lift cylinder stops before going under header for any reason.

a. Raise header fully.

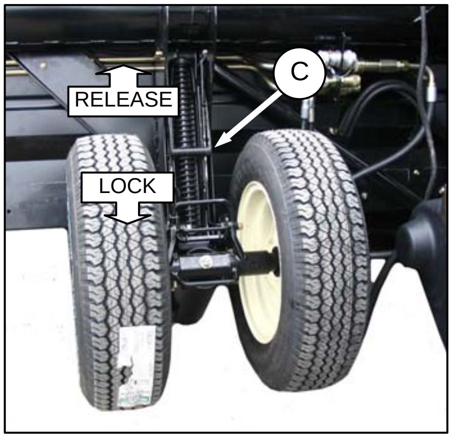
b. Swivel wheel assembly so that wheels are aligned with lower frame.





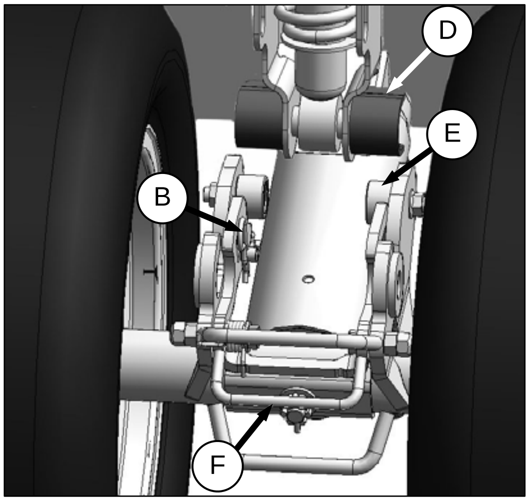
TRANSPORT TO FIELD - FRONT WHEELS

c. Remove pin (A), and pull wheel assembly towards rear of header. Store pin (A) in hole at top of leg.



TRANSPORT TO FIELD - FRONT WHEELS

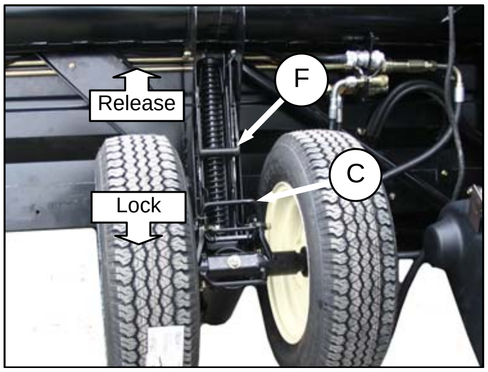
d. Pull handle (C) to release and lower the linkage.



TRANSPORT TO FIELD - FRONT WHEELS

e. Align lift hook (D) with lug (E), and lift wheel assembly to engage pin in hook. Ensure latch (F) is engaged.

f. Install clevis pin (B), and secure with hairpin.

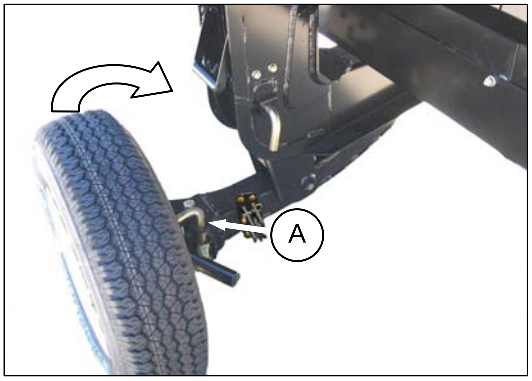


TRANSPORT TO FIELD - FRONT WHEELS

g. Lift wheel assembly to desired height, and slide linkage (F) into appropriate slot in vertical support.

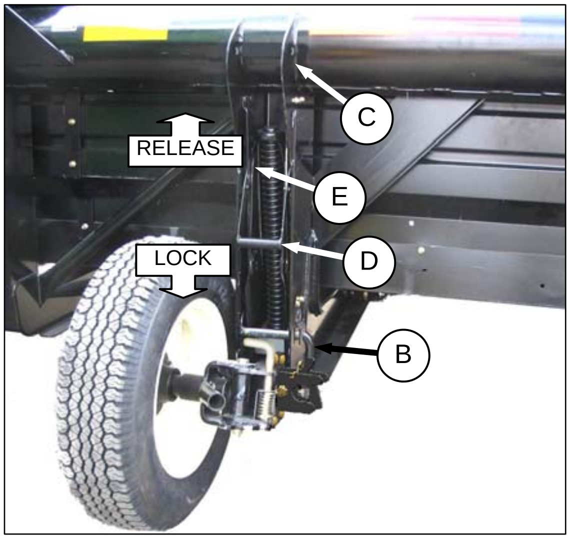
h. Push down on handle (C) to lock.

7.15.3.2 Rear Wheels To Field Position



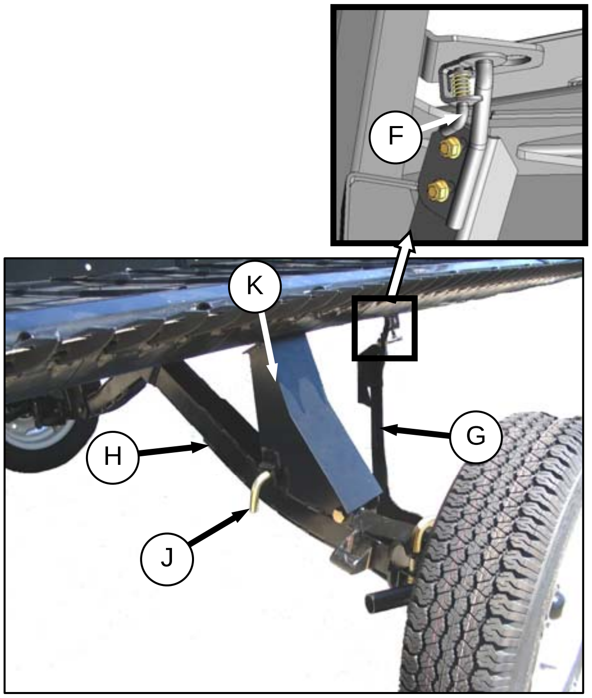
TRANSPORT TO FIELD - LH WHEEL

a. Pull pin (A) at left wheel, swivel wheel clockwise, and lock with pin (A).



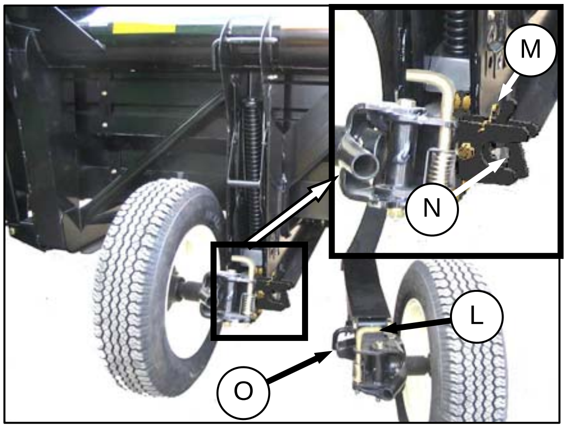
TRANSPORT TO FIELD - LH WHEEL

b. Remove pin at (B). Store pin at (C) as shown.
c. Pull handle (D) to release.
d. Lift wheel to desired height, and engage support channel into slot (E) in upper support.
e. Push down on handle (D) to lock.



TRANSPORT TO FIELD - RH WHEEL

f. At right cutterbar wheel, pull pin (F) on brace (G), disengage brace from cutterbar, and lower the brace against axle (H).
g. Remove pin (J), lower the support (K) onto axle, and re-insert pin into support.
h. Swing axle clockwise to rear of header.



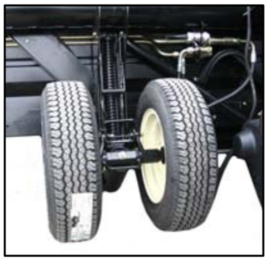
TRANSPORT TO FIELD - RH SIDE

i. Pull pin (L) at right wheel, swivel wheel counterclockwise to position shown, and lock with pin.
j. Remove hairpin (M) from latch (N).
k. Lift wheel, lift latch (N), and engage lug (O) onto left axle. Ensure latch closes.
l. Secure latch with hairpin (M).

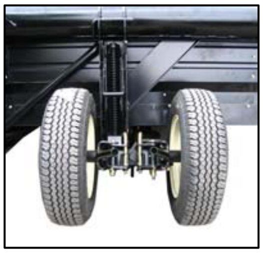
(continued next page)

IMPORTANT

Check that wheels are locked and that handle is in locked position.



FIELD POSITION - LH



FIELD POSITION - RH SIDE

m. The conversion is complete when the wheels are as shown.

7.15.4 Converting from Field to Transport Position

Raise header fully, and proceed as follows:

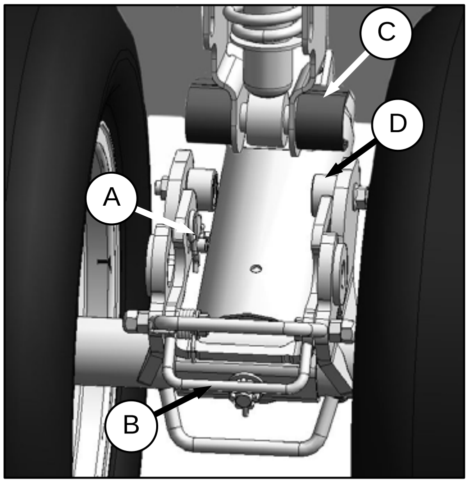
DANGER

To avoid bodily injury or death from unexpected start-up or fall of raised header, stop engine, remove key, and engage header lift cylinder stops before going under header for any reason.

7.15.4.1 Left Wheels To Transport Position

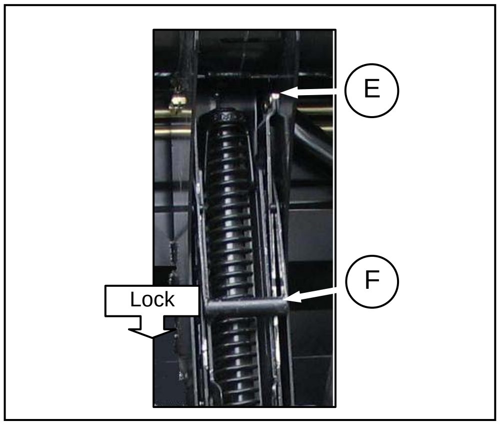
CAUTION

Stand clear of wheels and release linkage carefully as wheels will drop once the mechanism is released.



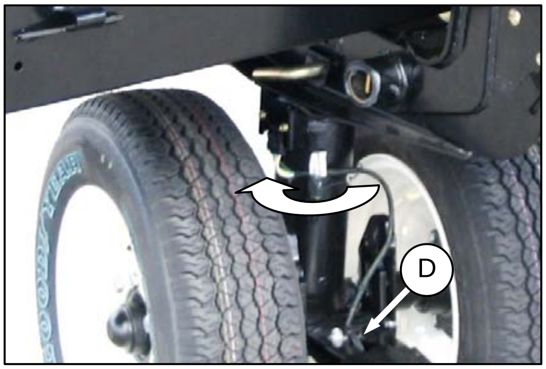
FIELD TO TRANSPORT - LH SIDE

a. Remove clevis pin (A).
b. Pull latch handle (B), and disengage link (C) from lug (D) to lower wheels.

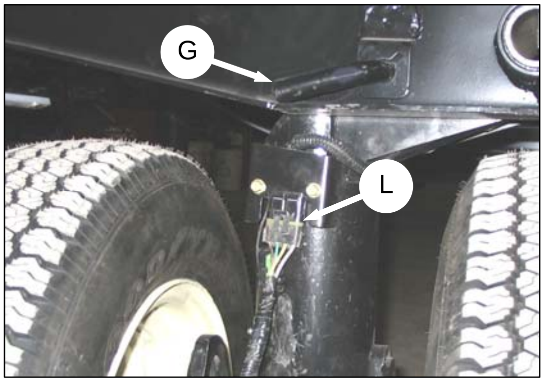


FIELD TO TRANSPORT - LH SIDE

c. Place suspension assembly in full upward position (E) in leg, and lower handle (F) to lock.

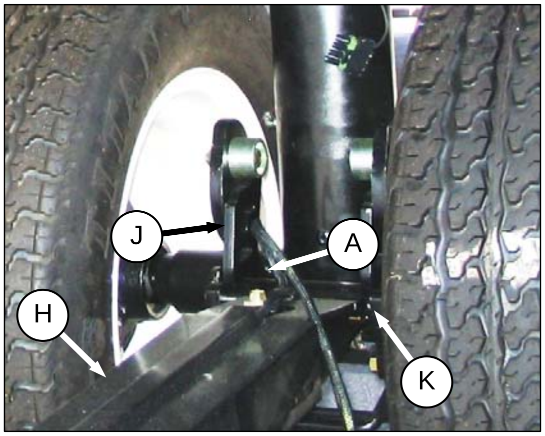


FIELD TO TRANSPORT - LH SIDE



FIELD TO TRANSPORT - LH SIDE

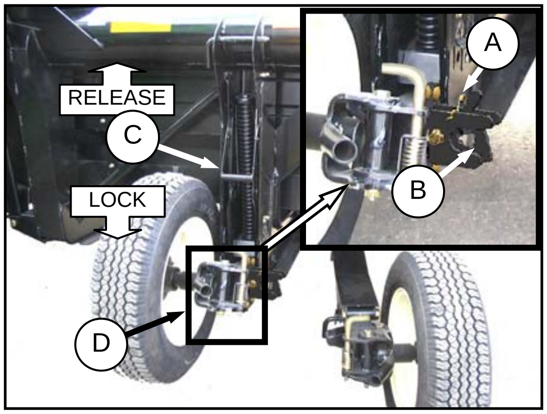
d. Remove pin (G) from storage at top of leg, move and swivel wheels clockwise so that lug (D) faces forward.
e. Insert pin (G), and turn pin to lock.



FIELD TO TRANSPORT - LH SIDE

f. Locate tow-bar (H) onto axle, and push against latch (J) until tow-bar pins drop into hooks (K).
g. Check that latch (J) has engaged tow-bar.
h. Install clevis pin (A), and secure with hairpin.
i. Connect plug (L) for lights.

7.15.4.2 Right Side Wheels To Transport Position



FIELD TO TRANSPORT - RH SIDE

a. At wheels at the right end of header, remove hairpin (A) from latch.

b. Lift latch (B), disengage right axle, and lower to ground.

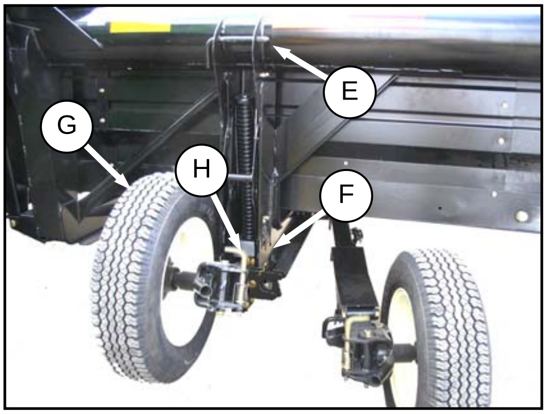
CAUTION

Stand clear of wheels and release linkage carefully as wheels will drop once the mechanism is released.

c. Carefully pull handle (C) to release the spring, and let the wheel drop to the ground.

d. Lift wheel and linkage with handle (D), and position linkage in second slot from bottom.

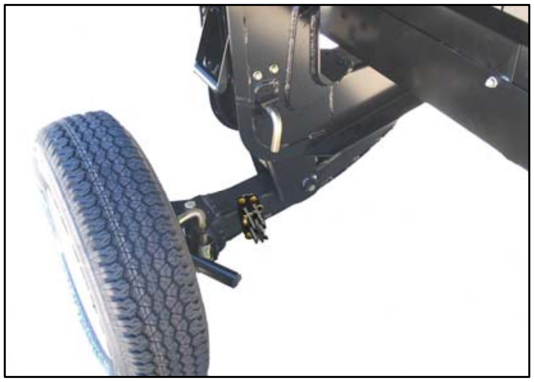
e. Lower handle (C) to lock.



FIELD TO TRANSPORT - RH SIDE

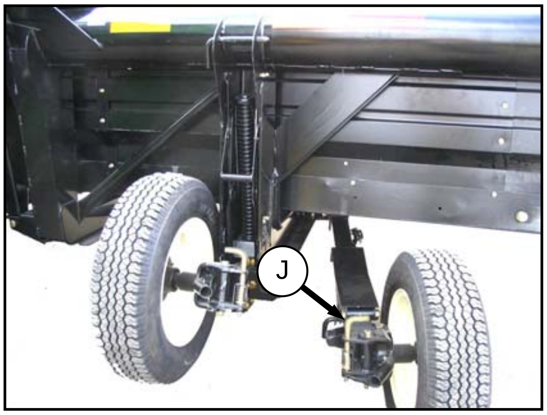
f. Remove pin (E), and install at (F) to secure linkage. Turn pin (E) to lock.

g. To position the left wheel (G), pull pin (H), swivel wheel counterclockwise, and re-lock with pin (H).



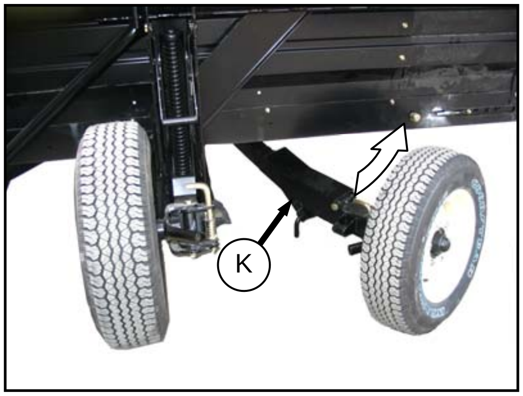
FIELD TO TRANSPORT - LH WHEEL

h. Left wheel is now in Transport position as shown above.



FIELD TO TRANSPORT - RH SIDE

i. Pull pin (J), swivel wheel clockwise as shown, and lock with pin (J).



FIELD TO TRANSPORT - RH WHEEL

j. Swivel the right axle (K) to front of header.

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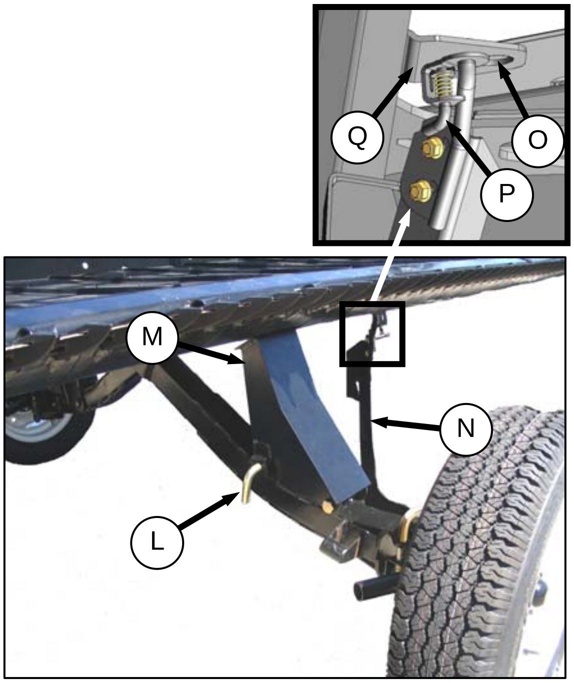


TRANSPORT POSITION - RH WHEEL

k. Remove pin (L), raise support (M) to position shown, and re-insert pin (L).

IMPORTANT

Ensure pin (L) engages the tube on the axle.

l. Swing brace (N) into position as shown, and insert brace into slot (O) behind cutterbar. Position brace so that pin (P) engages hole in bracket (Q).

m. Right hand wheel is now in Transport position.

8 MAINTENANCE AND SERVICING

The following instructions are provided to assist Operator in the use of header.

Detailed maintenance, service, and parts information are contained in the Technical Manual and the Parts Catalog which are available from your MacDon Dealer.

8.1 PREPARATION FOR SERVICING

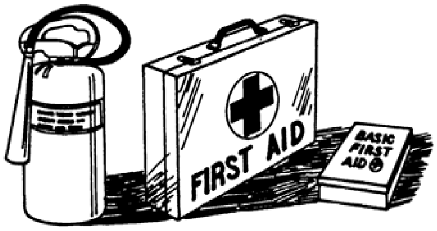
⚠AUTION

To avoid personal injury, before servicing header or opening drive covers:

1. **Fully lower the header. If necessary to service in the raised position, always engage lift cylinder stops.**
2. **Stop engine, and remove key.**
3. **Engage park brake.**
4. **Wait for all moving parts to stop.**

8.2 RECOMMENDED SAFETY PROCEDURES

- **Park on level surface when possible. Block wheels securely if combine is parked on an incline. Follow all recommendations in your Combine Operator's Manual.**
- **Wear close-fitting clothing, and cover long hair. Never wear dangling items such as scarves or bracelets.**
- **Wear protective shoes with slip-resistant soles, a hard hat, protective glasses or goggles and heavy gloves.**
- **If more than one person is servicing the machine at the same time, be aware that rotating a driveline or other mechanically driven component by hand (for example, accessing a lube fitting) will cause drive components in other areas (belts, pulleys, and sickle) to move. Stay clear of driven components at all times.**



- **Be prepared if an accident should occur. Know where the first aid kit and fire extinguishers are located and how to use them.**

- **Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.**
- **Use adequate light for the job at hand.**
- **Replace all shields removed or opened for service.**
- **Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design or safety requirements.**
- **Keep the machine clean. Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.**

8.3 MAINTENANCE SPECIFICATIONS

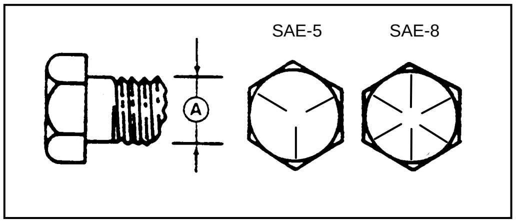
8.3.1 Recommended Torques

- Tighten all bolts to the torques specified in chart (unless otherwise noted throughout this manual).
- Check tightness of bolts periodically, using bolt torque chart as a guide.
- Replace hardware with the same strength bolt.
- Torque figures are valid for non-greased or non-oiled threads and heads (unless otherwise specified).
- Do not grease or oil bolts or capscrews unless specified in this manual.
- When using locking elements, increase torque values by 5%.

8.3.1.1 SAE Bolts

BOLT DIA. "A" (in.)	NC BOLT TORQUE*			
	SAE-5		SAE-8	
	lbf·ft	N·m	lbf·ft	N·m
1/4	9	12	11	15
5/16	18	24	25	34
3/8	32	43	41	56
7/16	50	68	70	95
1/2	75	102	105	142
9/16	110	149	149	202
5/8	150	203	200	271
3/4	265	359	365	495
7/8	420	569	600	813
1	640	867	890	1205

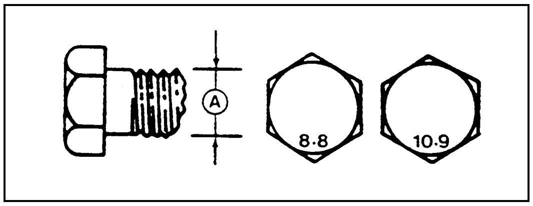
* Torque categories for bolts and capscrews are identified by their head markings.



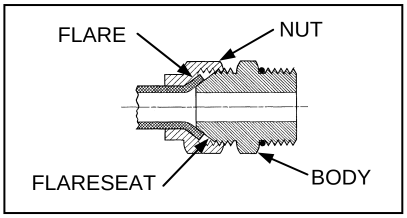
8.3.1.2 Metric Bolts

BOLT DIA. "A"	STD COARSE BOLT TORQUE*			
	8.8		10.9	
	lbf·ft	N·m	lbf·ft	N·m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M5	4	6	7	9
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	103	140	148	200
M16	166	225	229	310
M20	321	435	450	610
M24	553	750	774	1050
M30	1103	1495	1550	2100
M36	1917	2600	2710	3675

* Torque categories for bolts and capscrews are identified by their head markings.



8.3.1.3 Flare Type Hydraulic Fittings

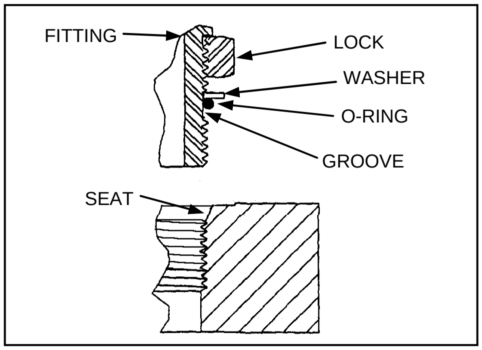


a. Check flare and flare seat for defects that might cause leakage.
b. Align tube with fitting before tightening.
c. Lubricate connection, and hand-tighten swivel nut until snug.
d. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body, and with the second, tighten the swivel nut to the torque shown.

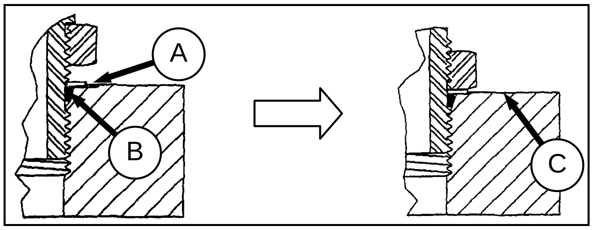
SAE NO.	TUBE SIZE O.D. (in.)	THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
				ft·lbf	N·m	Flats	Turns
3	3/16	3/8	7/16	6	8	1	1/6
4	1/4	7/16	9/16	9	12	1	1/6
5	5/16	1/2	5/8	12	16	1	1/6
6	3/8	9/16	11/16	18	24	1	1/6
8	1/2	3/4	7/8	34	46	1	1/6
10	5/8	7/8	1	46	62	1	1/6
12	3/4	1-1/16	1-1/4	75	102	3/4	1/8
14	7/8	1-3/16	1-3/8	90	122	3/4	1/8
16	1	1-5/16	1-1/2	105	142	3/4	1/8

* Torque values shown are based on lubricated connections as in re-assembly.

8.3.1.4 O-ring Type Hydraulic Fittings



a. Inspect O-ring and seat for dirt or obvious defects.

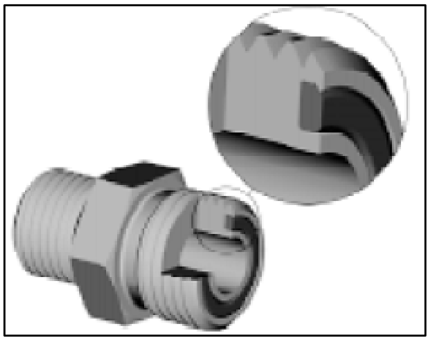


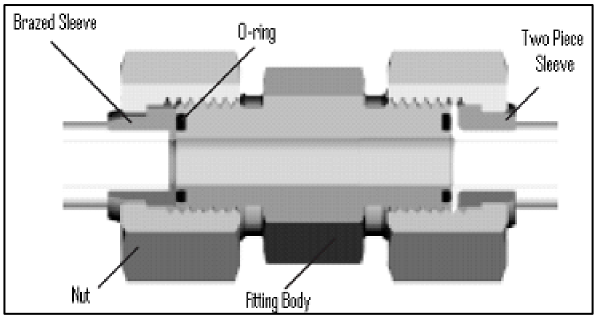
b. On angle fittings, back off the lock nut until washer (A) bottoms out at top of groove (B) in fitting.
c. Hand-tighten fitting until back up washer (A) or washer face (if straight fitting) bottoms on part face (C), and O-ring is seated.
d. Position angle fittings by unscrewing **no more than one turn**.
e. Tighten straight fittings to torque shown.
f. Tighten angle fittings to torque shown in the following table, while holding body of fitting with a wrench.

SAE NO.	THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
			ft·lbf	N·m	Flats	Turns
3	3/8	1/2	6	8	3	3/8
4	7/16	9/16	9	12	4	7/16
5	1/2	5/8	12	16	5	1/2
6	9/16	11/16	18	24	6	9/16
8	3/4	7/8	34	46	8	3/4
10	7/8	1	46	62	10	7/8
12	1-1/16	1-1/4	75	102	12	1-1/16
14	1-3/16	1-3/8	90	122	14	1-3/16
16	1-5/16	1-1/2	105	142	16	1-5/16
20	1-5/8	1-7/8	140	190	20	1-5/8
24	1-7/8	2-1/8	160	217	24	1-7/8

* Torque values shown are based on lubricated connections as in re-assembly.

8.3.1.5 O-ring Face Seal (ORFS) Hydraulic Fittings





SAE NO.	THD SIZE (in.)	TUBE O.D. (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)**	
			ft·lbf	N·m	Tube Nuts	Swivel & Hose
3	***	3/16	---	---	---	---
4	9/16	1/4	11–12	14–16	1/4–1/2	1/2–3/4
5	***	5/16	---	---	---	---
6	11/16	3/8	18–20	24–27	1/4–1/2	1/2–3/4
8	13/16	1/2	32–35	43–47		
10	1	5/8	45–51	60–68		
12	1-3/16	3/4	67–71	90–95		1/3–1/2
14	1-3/16	7/8	67–71	90–95		
16	1-7/16	1	93–100	125–135		
20	1-11/16	1-1/4	126–141	170–190		
24	2	1-1/2	148–167	200–225		
32	2-1/2	2	---	---	---	---

* Torque values and angles shown are based on lubricated connection, as in re-assembly.

** Always default to the torque value for evaluation of adequate torque.

*** O-ring face seal type end not defined for this tube size.

a. Check components to ensure that the sealing surfaces and fitting threads are free of burrs, nicks, and scratches, or any foreign material.

b. Apply lubricant (typically Petroleum Jelly) to O-ring and threads. If O-ring is not already installed, install O-ring. Align the tube or hose assembly.

c. Ensure that flat face of the mating flange comes in full contact with O-ring.

d. Thread tube or hose nut until hand-tight. The nut should turn freely until it is bottomed out. Torque fitting further to the specified number of F.F.F.T ("Flats From Finger Tight"), or to a given torque value in the table shown in the opposite column.

NOTE

If available, always hold the hex on the fitting body to prevent unwanted rotation of fitting body and hose when tightening the fitting nut.

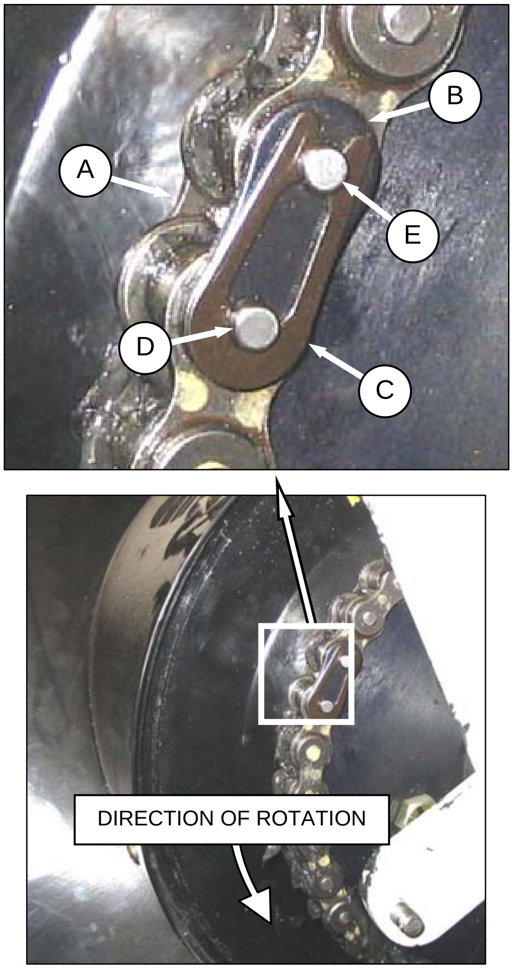
e. When assembling unions or two hoses together, three wrenches will be required.

8.3.2 Roller Chain Installation

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. Locate ends of chain on sprocket.



b. Install pin connector (A) into chain, preferably from the sprocket backside.

c. Install connector (B) onto pins.

d. Install spring clip (C) onto front pin (D) with closed end of clip in direction of sprocket rotation.

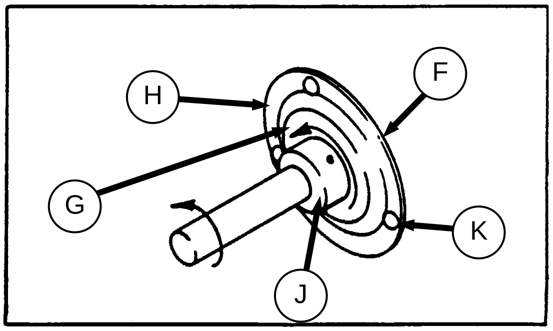
e. Locate one leg of clip in groove of aft pin (E).

f. Press other leg of spring clip over face of aft pin (E) until it slips into groove. Do not press clip lengthwise from closed end.

g. Ensure clip is seated in grooves of pins.

8.3.3 Sealed Bearing Installation

a. Clean shaft and coat with rust preventative.



b. Install flangette (F), bearing (G), second flangette (H) and lock collar (J).

NOTE

The locking cam is only on one side of the bearing.

c. Install (but do not tighten) flangette bolts (K).

d. When the shaft is correctly located, lock the lock collar with a punch.

NOTE

The collar should be locked in the same direction the shaft rotates. Tighten the set screw in the collar.

e. Tighten flangette bolts.

f. Loosen flangette bolts on mating bearing one turn, and re-tighten. This will allow bearing to line up.

8.3.4 Recommended Fluids and Lubricants

Your machine can operate at top efficiency only if clean lubricants are used.

- Use clean containers to handle all lubricants.
- Store in an area protected from dust, moisture, and other contaminants.

LUBRICANT	SPEC.	DESCRIPTION	USE	CAPACITIES
Grease	SAE Multi-Purpose	High Temperature Extreme Pressure (EP2) Performance With 1% Max. Molybdenum Disulphide (NLGI Grade 2) Lithium Base	As Required Unless Otherwise Specified.	---
		High Temperature Extreme Pressure (EP) Performance With 10% Max. Molybdenum Disulphide (NLGI Grade 2) Lithium Base	Driveline Slip-Joints	---
Gear Lubricant	SAE 85W-140	API Service Class GL-5	Sickle Drive Box	2.3 US quarts (2.2 liters)
			Main Drive Gearbox	5 pints (2.5 liters)
Hydraulic Oil	SAE 15W-40	Compliant With SAE Specs For API Class SJ And CH-4 Engine Oil	Header Drive Systems Reservoir	16 US gallons (60 liters)

8.3.5 Conversion Chart

QUANTITY	INCH-POUND UNITS		FACTOR	SI UNITS (METRIC)	
	UNIT NAME	ABBR.		UNIT NAME	ABBR.
Area	acres	acres	x 0.4047 =	hectares	ha
Flow	US gallons per minute	gpm	x 3.7854 =	liters per minute	L/min
Force	pounds force	lbf	x 4.4482 =	Newtons	N
Length	inch	in.	x 25.4 =	millimeters	mm
	foot	ft	x 0.305 =	meters	m
Power	horsepower	hp	x 0.7457 =	kilowatts	kW
Pressure	pounds per square inch	psi	x 6.8948 =	kilopascals	kPa
			x .00689 =	megapascals	MPa
Torque	pound feet or foot pounds	lbf·ft or ft·lbf	x 1.3558 =	newton meters	N·m
	pound inches or inch pounds	lbf·in. or in·lbf	x 0.1129 =	newton meters	N·m
Temperature	degrees Fahrenheit	˚F	(˚F - 32) x 0.56 =	Celsius	˚C
Velocity	feet per minute	ft/min	x 0.3048 =	meters per minute	m/min
	feet per second	ft/s	x 0.3048 =	meters per second	m/s
	miles per hour	mph	x 1.6063 =	kilometers per hour	km/h
Volume	US gallons	US gal.	x 3.7854 =	liters	L
	ounces	oz.	x 29.5735 =	milliliters	ml
	cubic inches	in.^{3}	x 16.3871 =	cubic centimeters	cm^3 or cc
Weight	pounds	lb	x 0.4536 =	kilograms	kg

8.4 MAINTENANCE REQUIREMENTS

The following maintenance schedule is a listing of periodic maintenance procedures, organized by service intervals. Regular maintenance is the best insurance against early wear and untimely breakdowns. Following this schedule will increase machine life.

For detailed instructions, refer to the specific headings in this section. Use the fluids and lubricants specified in Section 8.3.4 Recommended Fluids and Lubricants.

Log hours of operation, and use the Maintenance Record on the next page to keep a record of scheduled maintenance. You will want to make copies of the Maintenance Record page for this purpose.

Service Intervals: The recommended service intervals are in hours of operation. Where a service interval is given in more than one time frame, e.g. "100 hours or Annually", service the machine at whichever interval is reached first.

IMPORTANT

Recommended intervals are for average conditions. Service the machine more often if operated under adverse conditions (severe dust, extra heavy loads, etc.).

CAUTION

Carefully follow safety messages given under Section 8.1 PREPARATION FOR SERVICING, and Section 8.2 RECOMMENDED SAFETY PROCEDURES.

8.4.1 Maintenance Schedule/Record

ACTION:		**✓ - Check**					**💧 - Lubricate**							**▲ - Change**						
MAINTENANCE RECORD	**Hour Meter Reading**																			
	Date																			
	Serviced By																			
FIRST USE		Refer To Section 8.4.2 Break-In Inspections.																		
100 HOURS OR ANNUALLY																				
✓	Auger to Pan and Feed Draper Clearance - Section 8.8.1																			
✓	Draper Seal - Section 8.11.5																			
✓	Gearbox Lubricant Level - Section 8.4.5.4																			
✓	Reel Drive Chain Tension - Section 8.12.4																			
✓	Reel Tine / Cutterbar Clearance - Section 8.12.1																			
✓	Sickle Drive Belt Tension - Section 8.9.8																			
✓	Wheel Bolt Torque - Section 8.13.1																			
✓	Sickle Drive Box Lubricant Level - Section 8.4.5																			
✓	Sickle Drive Box Mounting Bolts - Section 8.9.10.1																			
💧	Auger Drive Chain - Section 8.8.2																			
💧	Float Pivots - Section 8.4.5																			
💧	Float Spring Tensioners - Section 8.4.5																			
💧	Reel Drive Chain - Section 8.4.5																			
💧	Upper Cross Auger RH Bearing - Section 8.4.5																			
END OF SEASON		Refer To Section 8.4.4 End of Season.																		
10 HOURS OR DAILY		**NOTE: A RECORD OF DAILY MAINTENANCE IS NOT NORMALLY REQUIRED, BUT IS AT THE OWNER/OPERATOR'S DISCRETION.**																		
✓	Hydraulic Hoses and Lines - Section 8.5.3																			
✓	Sections, Guards, Hold-downs - Sections 8.9.1, 8.9.6, 8.9.7																			
✓	Tire Pressure - Section 8.13.3																			
💧	Sickle (except in sandy conditions) - Section 8.4.5																			
25 HOURS																				
✓	Hydraulic Oil Level at Reservoir - Section 8.5.1.1																			
💧	Sickle Head(s) - Section 8.4.5																			

(continued next page)

50 HOURS																				
💧	Draper Roller Bearings - Section 8.4.5																			
💧	Driveline and Driveline Universals - Section 8.4.5																			
💧	Sickle Drive Shaft Bearings (DK) - Section 8.4.5																			
▲	Sickle Drive Box Oil - First 50 Hours Only - Section 8.9.10.6																			
250 HOURS OR ANNUALLY																				
✓	Draper Seal - Section 8.11.4																			
💧	Adapter Auger Pivots - Section 8.4.5																			
💧	Upper Cross Auger Center Support - Section 8.4.5																			
💧	Reel Drive U-joint - Section 8.4.5																			
💧	Transport Axle Pivot Bushings - Section 8.4.5																			
▲	Hydraulic Oil Filter - Section 8.5.2																			
500 HOURS OR ANNUALLY																				
✓	Draper Seal - Section 8.11.5																			
💧	Reel Shaft Bearings - Section 8.4.5																			
💧	Stabilizer/Transport Wheel Bearings - Section 8.4.5																			
✓	Gearbox Chain Tension - Section 8.7.5																			
1000 HOURS OR 3 YEARS																				
▲	Sickle Drive Box Lubricant - Section 8.9.10.6																			
1500 HOURS OR 3 YEARS																				
▲	Change Hydraulic Oil - Section 8.5.1.3																			
▲	Change Gearbox Lubricant - Section 8.4.5.4																			

8.4.2 Break-In Inspections

	ITEM	REFER TO
AT 5 MINUTES	Check Reservoir Hydraulic Oil Level.	Section 8.5.1 Reservoir
AT 5 HOURS	Check For Loose Hardware. Tighten To Required Torque.	Section 8.3.1 Recommended Torques
	Check Sickle Drive Belts Tension. Periodically Check For First 50 Hours.	Section 8.9.8 Sickle Drive Belts: Non-Timed Drive
AT 10 HOURS	Check Sickle Drive Box Mounting Bolts.	Section 8.9.10.1 Mounting Bolts
AT 50 HOURS	Change Adapter Gearbox Oil.	Section 8.4.5.4 Main Drive Gearbox Lubrication
	Change Adapter Hydraulic Oil Filter.	Section 8.5.2 Hydraulic Oil Filter
	Change Lubricant.	Section 8.9.10.6 Changing Oil
	Check Gearbox Chain Tension.	Section 8.7.5 Gearbox Drive Chain Adjustment

8.4.3 Pre-Season/Annual Service

Perform the following the beginning of each operating season:

CAUTION

- **Review the Operator's Manual to refresh your memory on safety and operating recommendations.**
- **Review all safety decals and other decals on the header, and note hazard areas.**
- **Be sure all shields and guards are properly installed and secured. Never alter or remove safety equipment.**
- **Be sure you understand and have practiced safe use of all controls. Know the capacity and operating characteristics of the machine.**
- **Check the first aid kit and fire extinguisher. Know where they are and how to use them.**

a. Adjust tension on drive belts. Refer to Section 8.9.8 Sickle Drive Belts: Non-Timed Drive.
b. Perform all annual maintenance. See Section 8.4.1 Maintenance Schedule/Record.

8.4.4 End of Season

Do the following at the end of each operating season:

a. Clean the header thoroughly.

CAUTION

Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.

CAUTION

Cover cutterbar and sickle guards to prevent injury from accidental contact.

b. Store the machine in a dry, protected place if possible. If stored outside, always cover with a waterproof canvas or other protective material.
c. If machine is stored outside, remove drapers and store in a dark, dry place.

NOTE:

If drapers are not removed, store header with cutterbar lowered so water/snow will not accumulate on drapers. This accumulation of weight puts excessive stress on drapers and header

d. Lower header onto blocks to keep cutterbar off the ground.
e. Lower reel completely. If stored outside, tie reel to frame to prevent rotation caused by wind.
f. Re-paint all worn or chipped painted surfaces to prevent rust.
g. Loosen drive belts.
h. Lubricate the header thoroughly, leaving excess grease on fittings to keep moisture out of bearings. Apply grease to exposed threads, cylinder rods and sliding surfaces of components. Oil sickle components to prevent rust.
i. Check for worn or broken components and repair or order replacement from your MacDon Dealer. Attention to these items right away will save time and effort at beginning of next season.
j. Replace or tighten any missing or loose hardware. Refer to Section 8.3.1 Recommended Torques.

8.4.5 Lubrication and Servicing

CAUTION

To avoid personal injury, before servicing header or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

Log hours of operation and use the Maintenance Record provided to keep a record of scheduled maintenance. Refer to Section 8.4.1 Maintenance Schedule/Record.

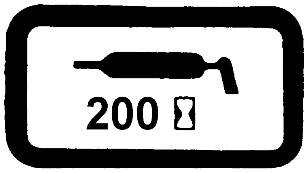
8.4.5.1 Service Intervals

Refer to the illustrations on the following pages to identify the various locations that require lubrication and servicing. Illustrations are organized by the frequency of service that is required.

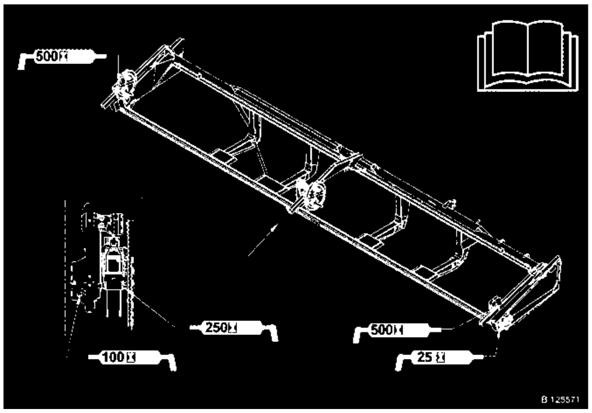
8.4.5.2 Greasing Procedure

DANGER

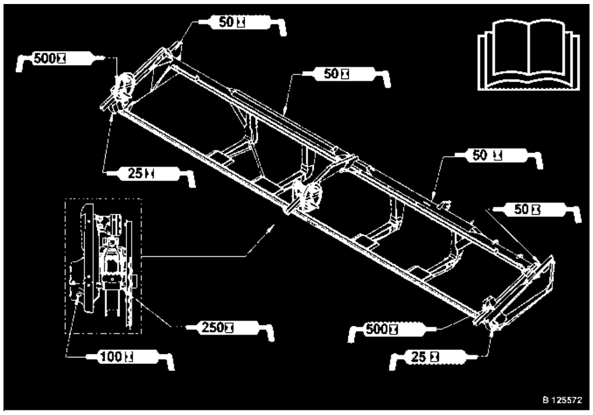
Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



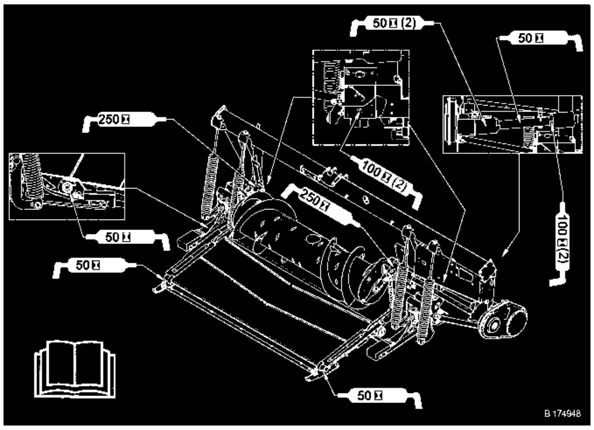
a. The greasing points are marked on the machine by decals showing a grease gun and grease interval in hours of operation.
b. Use the recommended lubricants specified in this manual. See Section 8.3.4 Recommended Fluids and Lubricants.
c. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
d. Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
e. Leave excess grease on fitting to keep out dirt.
f. Replace any loose or broken fittings immediately.
g. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
h. Master grease point location decals as shown below are provided on the header and adapter back frames.



SINGLE KNIFE

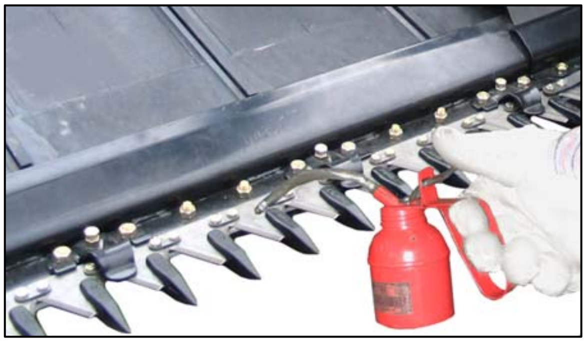


DOUBLE KNIFE



ADAPTER

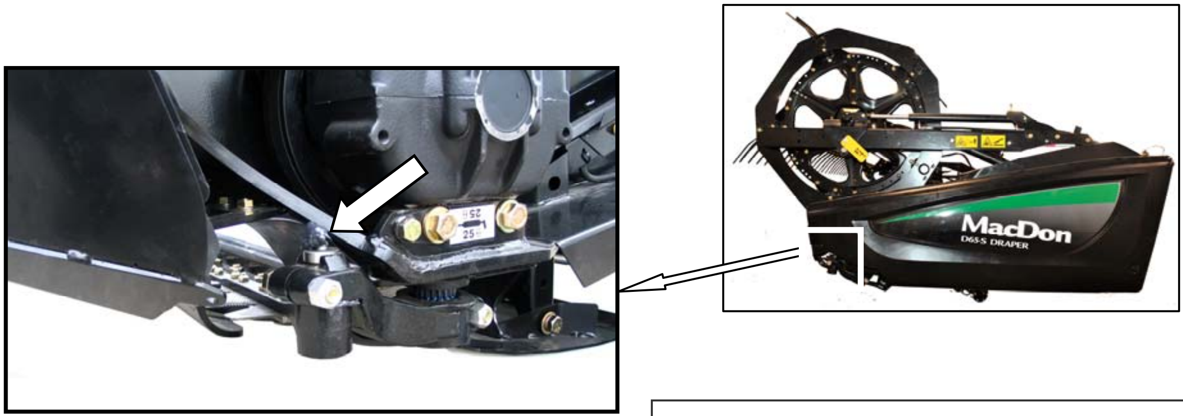
EVERY 10 HOURS OR DAILY



EXCEPT IN SANDY CONDITIONS

EVERY 25 HOURS

High Temperature Extreme
Pressure (EP2) Performance With
1% Max Molybdenum Disulphide
(NLGI Grade 2) Lithium Base



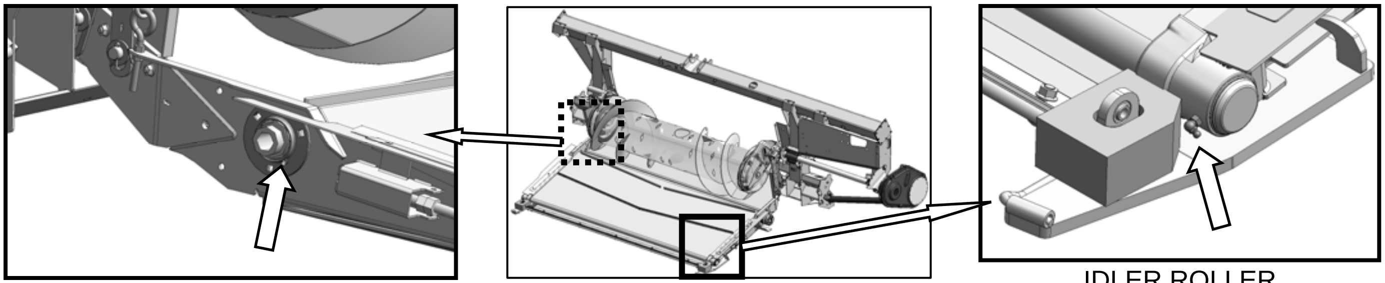
SICKLE HEAD
(SINGLE KNIFE - 1 PLC)
(DOUBLE KNIFE - 2 PLCS)

To prevent binding and/or excessive wear caused by sickle pressing on guards, do NOT over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

Check for signs of excessive heating on first few guards after greasing. If required, relieve pressure by depressing check-ball in grease fitting.

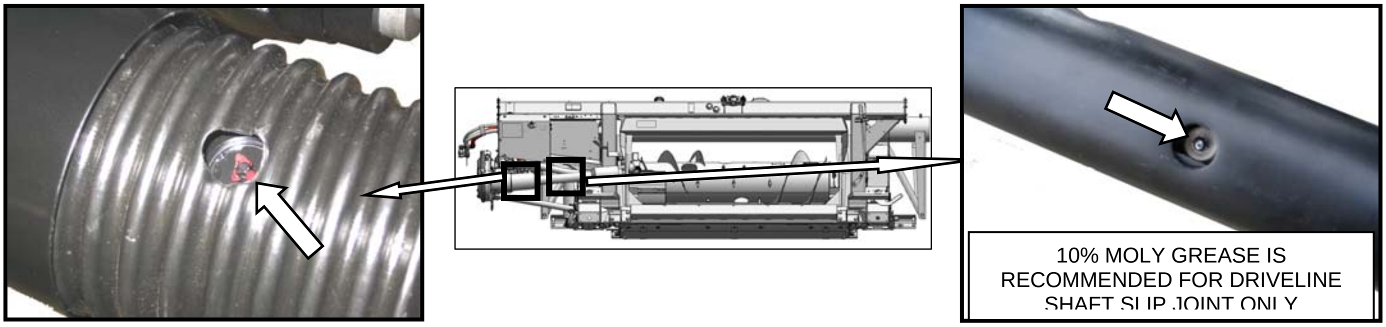
EVERY 50 HOURS

High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2) **Lit**hium Base



DRIVE ROLLER BEARING

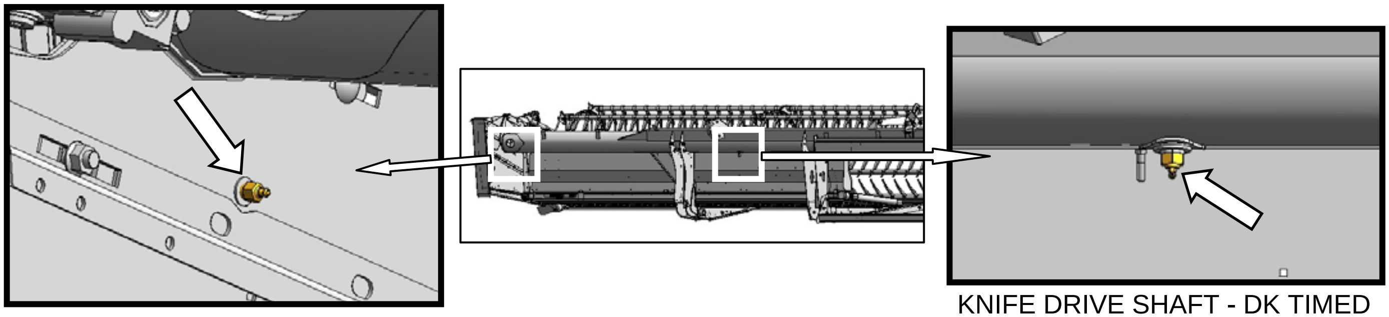
IDLER ROLLER
BOTH SIDES



10% MOLY GREASE IS RECOMMENDED FOR DRIVELINE SHAFT SLIP JOINT ONLY

DRIVE UNIVERSAL - 2 PLCS

DRIVELINE SLIP JOINT

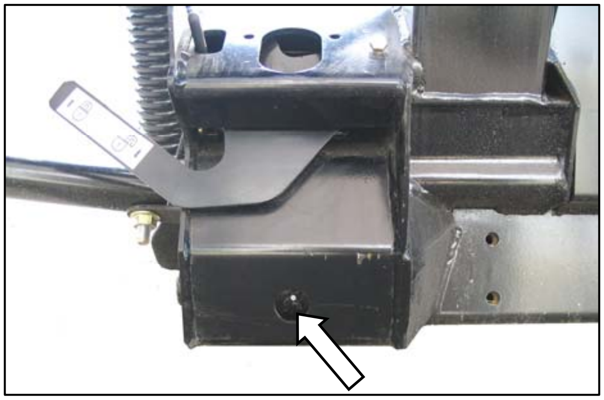


KNIFE DRIVE BEARING - DK TIMED DRIVE (BOTH SIDES)

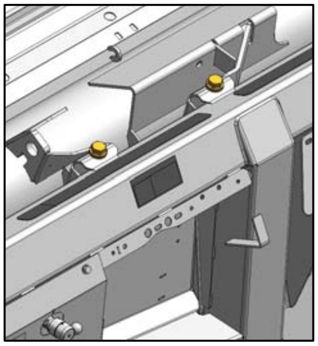
KNIFE DRIVE SHAFT - DK TIMED DRIVE (BOTH SIDES)
15 PUMPS MINIMUM

EVERY 100 HOURS

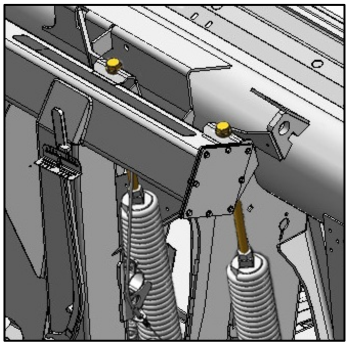
High Temperature Extreme
Pressure (EP2) Performance With
1% Max Molybdenum Disulphide
(NLGI Grade 2) Lithium Base



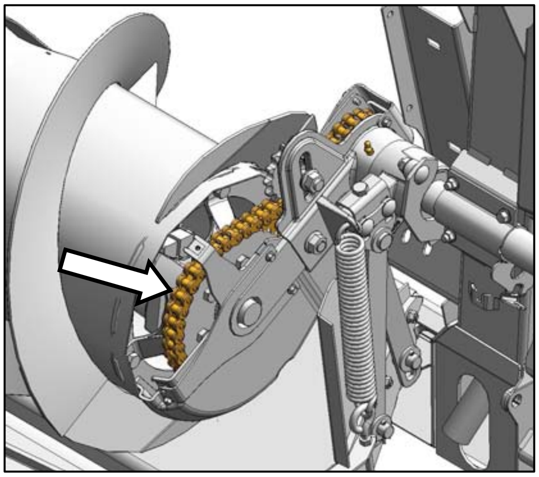
FLOAT PIVOT - 2 PLCS



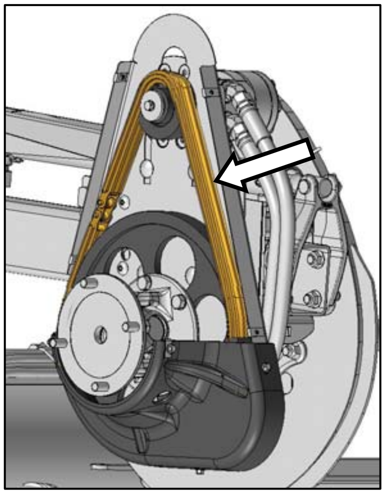
FLOAT SPRING TENSIONER - LH



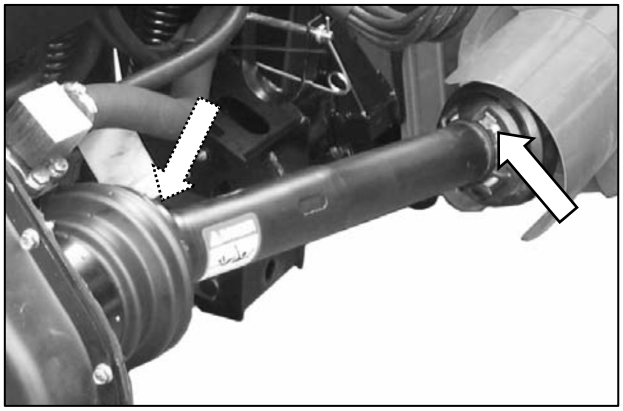
FLOAT SPRING TENSIONER - RH



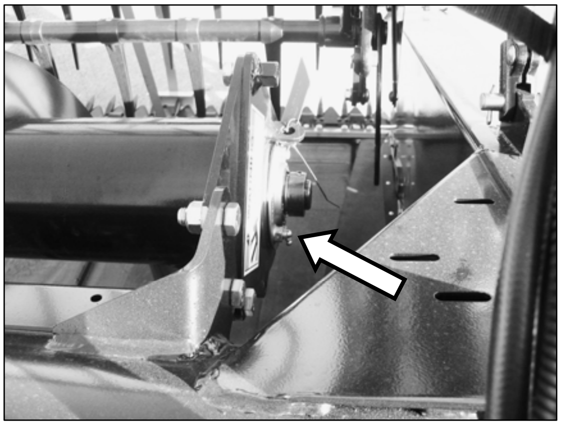
AUGER DRIVE CHAIN
SEE SECTION 8.4.5.3



REEL DRIVE CHAIN - 1 PLC
DR SHOWN - SR SIMILAR
SEE SECTION 8.12.4

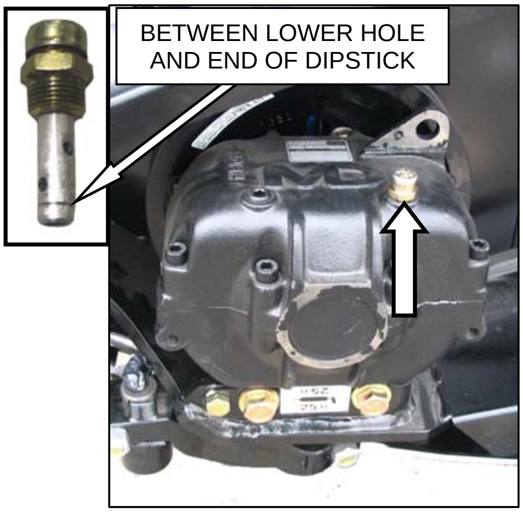


DRIVELINE GUARD - 2 PLCS

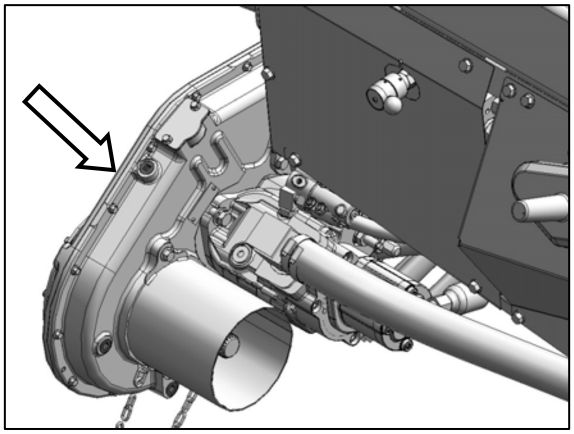


UPPER CROSS AUGER BEARING - 1 PLC

EVERY 100 HOURS (cont'd)


BETWEEN LOWER HOLE AND END OF DIPSTICK

SICKLE DRIVE BOX
(CHECK OIL LEVEL WITH TOP OF SICKLE DRIVE BOX HORIZONTAL)

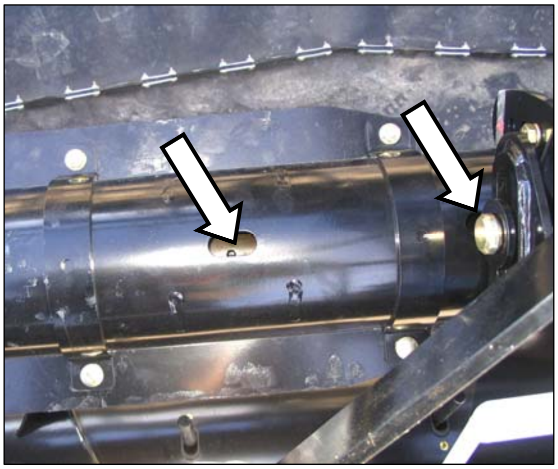


MAIN DRIVE GEARBOX OIL LEVEL
SEE SECTION 8.4.5.4

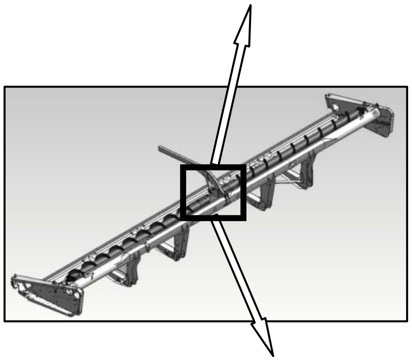
EVERY 250 HOURS

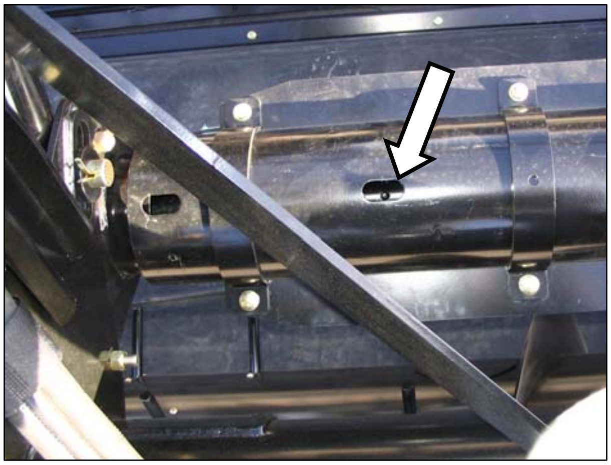
High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base

U-JOINT HAS AN EXTENDED LUBRICATION CROSS AND BEARING KIT. STOP GREASING WHEN GREASING BECOMES DIFFICULT OR IF U-JOINT STOPS TAKING GREASE. OVERGREASING WILL DAMAGE U-JOINT. 6–8 PUMPS IS SUFFICIENT AT FIRST GREASE (FACTORY). DECREASE GREASE INTERVAL AS U-JOINT WEARS AND REQUIRES MORE THAN 6 PUMPS.

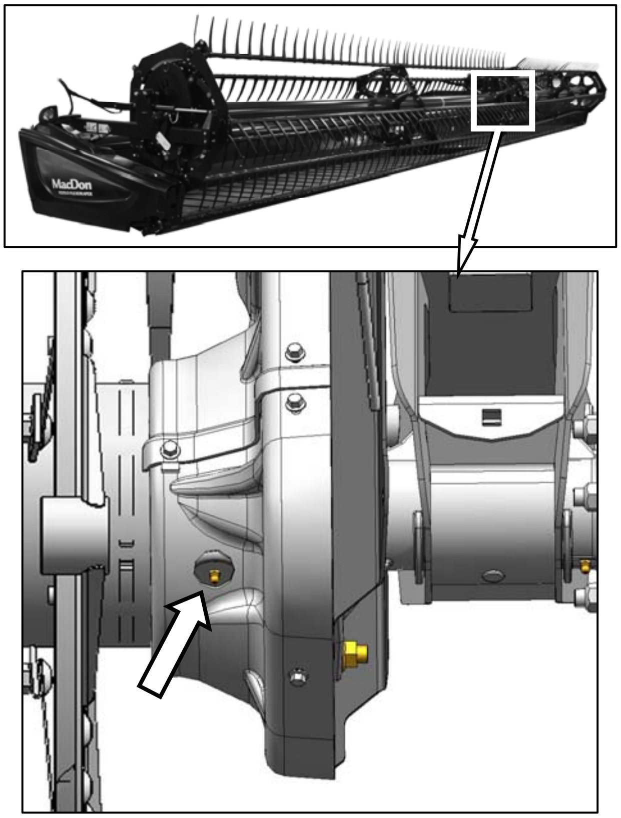


UPPER CROSS AUGER U-JOINT & BEARING





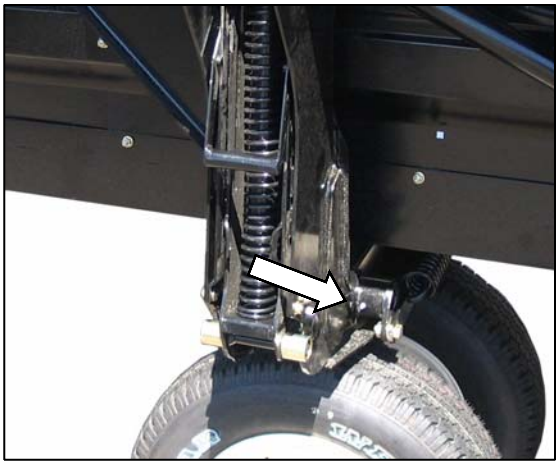
UPPER CROSS AUGER BEARING (1 PLC)

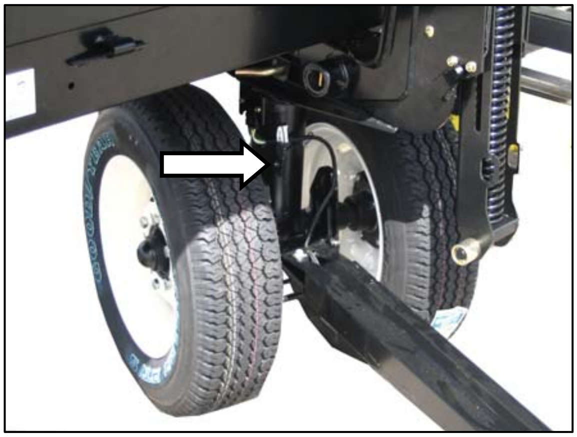


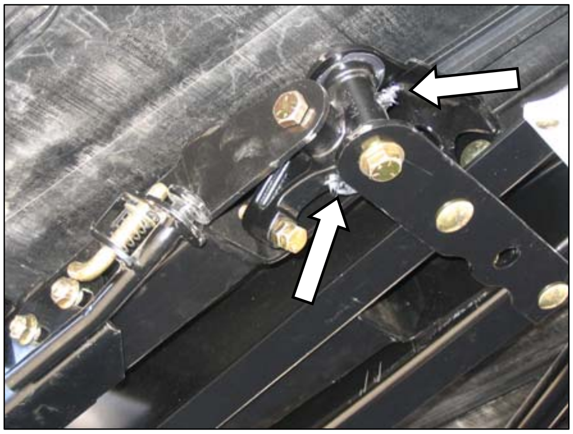
REEL U-JOINT (1 PLC) - DOUBLE REEL

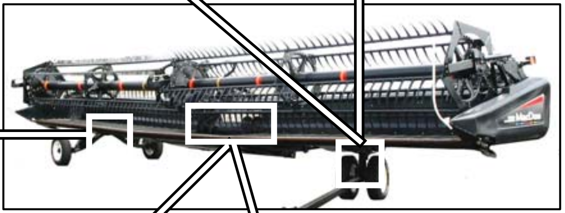
EVERY 250 HOURS (cont'd)

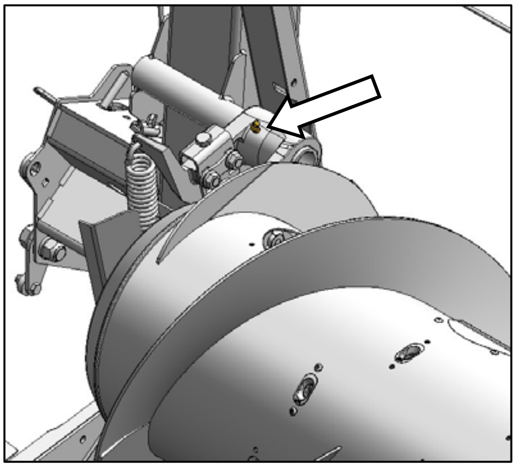
High Temperature Extreme
Pressure (EP2) Performance With
1% Max Molybdenum Disulphide
(NLGI Grade 2) Lithium Base

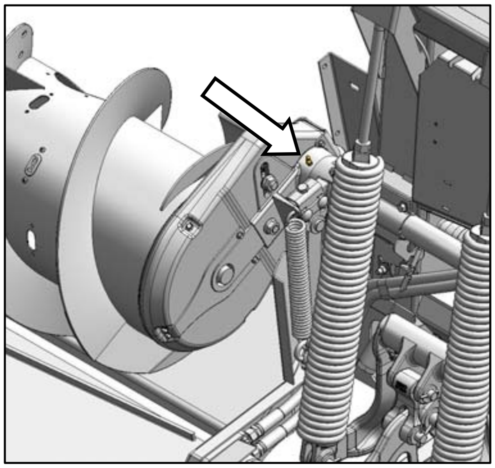

FRAME/WHEEL PIVOT (1 PLC) BOTH SIDES


LEFT SIDE - WHEEL PIVOT (1 PLC)

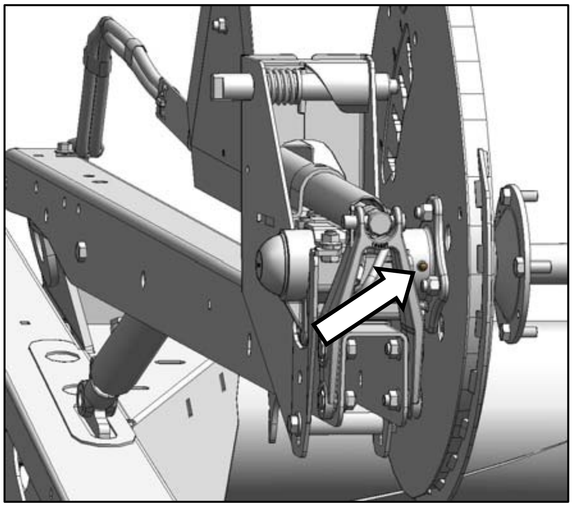

RIGHT SIDE - WHEEL AXLE (2 PLC)



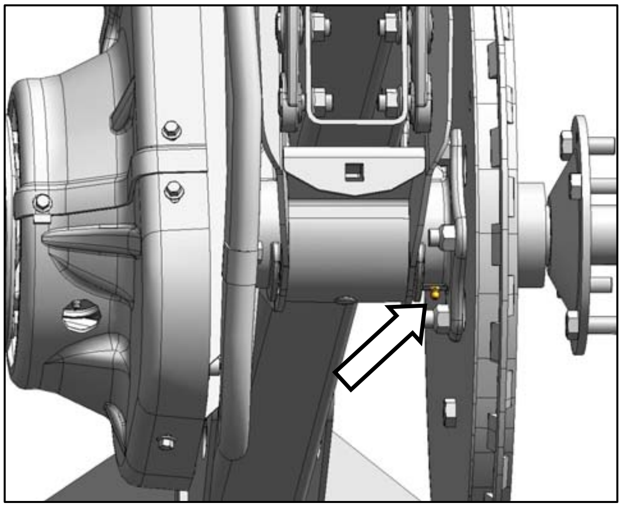

AUGER PIVOT


AUGER PIVOT

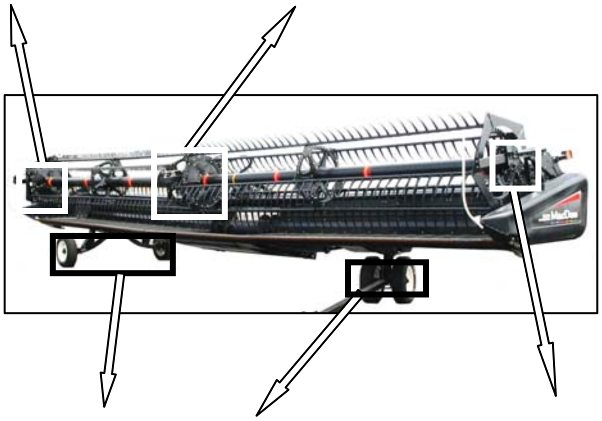
EVERY 500 HOURS



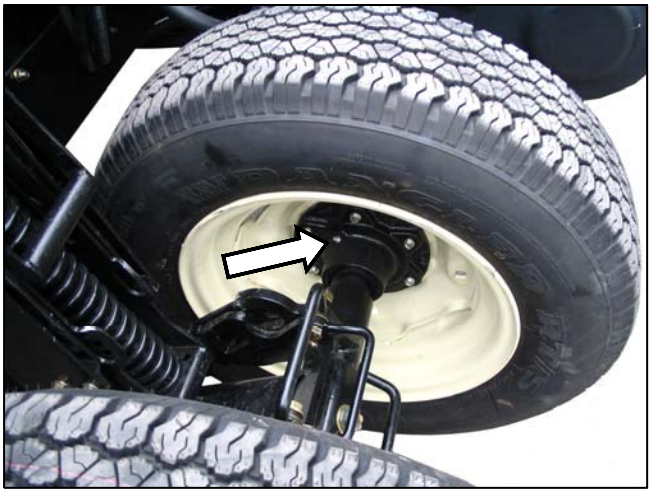
REEL SHAFT RH BEARING (1 PLC)



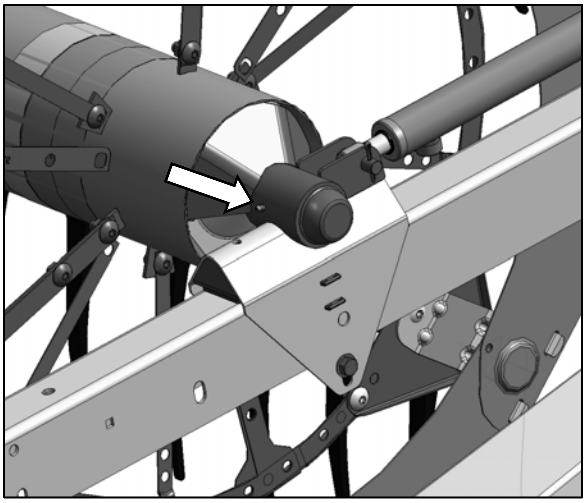
REEL CENTER BEARING (1 PLC)



High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base



WHEEL BEARINGS (4 PLCS)

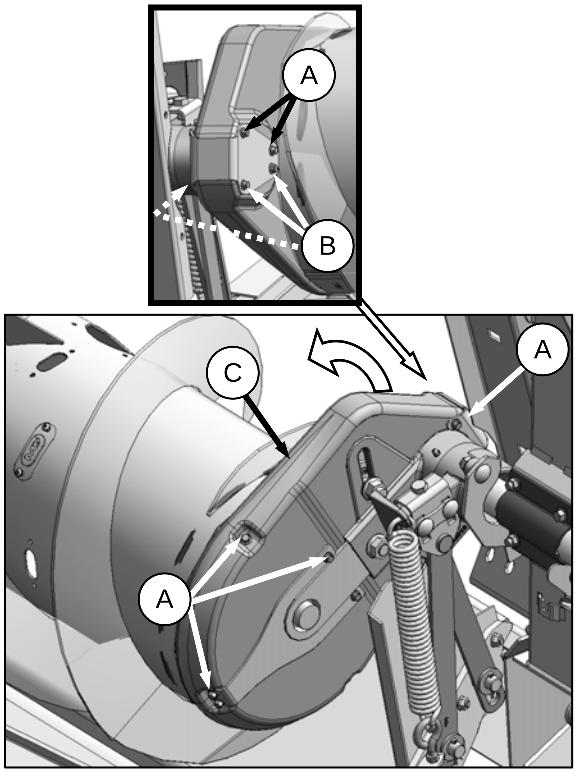


REEL SHAFT LH BEARING (1 PLC)

8.4.5.3 Auger Drive Chain Lubrication

Lubricate auger drive chain every 100 hours. This can be done with the adapter attached to the combine, but is easier if the adapter is detached.

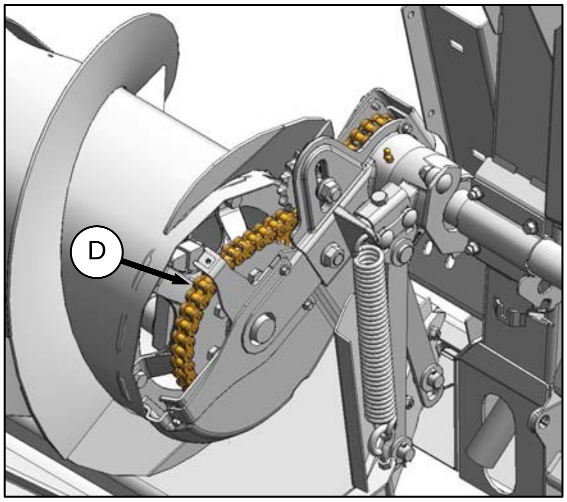
a. The auger drive cover consists of an upper and a lower half. Only the upper half needs to be removed to grease the chain.



b. Remove six bolts (A), securing the upper half (C).

c. Loosen three bolts (B) at the rear of the cover.

d. Rotate upper half (C) forward to remove.



e. Liberally apply grease to chain (D).

f. Re-install upper half (C), by positioning the inboard lip into the auger tube and rotating back to engage the rear support.

g. Replace and tighten bolts (A) and (B).

8.4.5.4 Main Drive Gearbox Lubrication

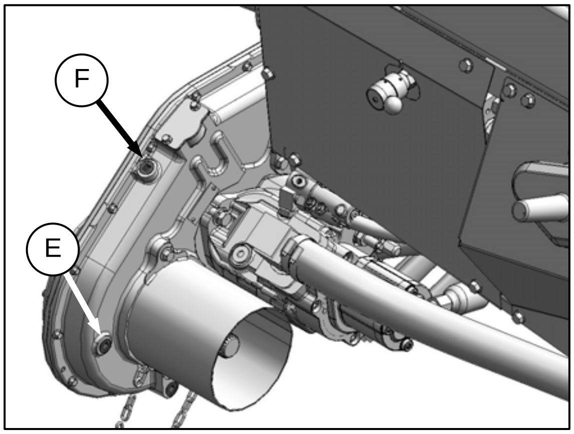
Oil Level

Check oil level every 100 hours as follows:

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. Set cutterbar to working position.



b. Remove oil level plug (E). Level should be to bottom of hole.

c. Re-install plug (E).

d. Add oil if required. See next section.

Adding Oil

a. Lower cutterbar to ground. Gearbox must be in working position.

b. Remove oil level plug (E) and filler plug (F).

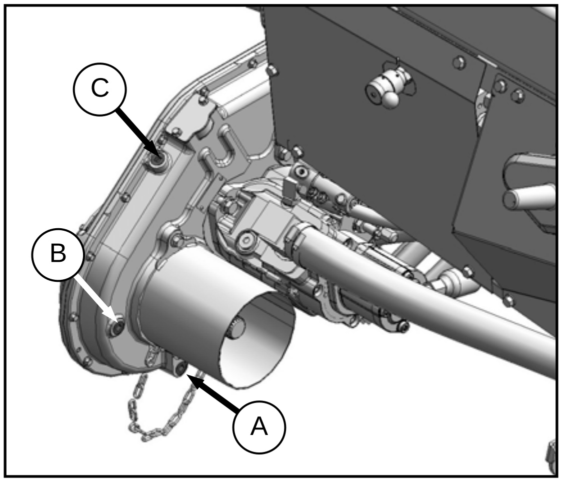
c. Add SAE 85W-140 oil at (F) until it runs out of hole (E).

d. Replace oil level plug (E) and filler plug (F).

Changing Gearbox Lubricant

NOTE

Change main drive gearbox lubricant after the first 50 hours of operation, and every 1000 hours (or 3 years) thereafter.



a. Raise or lower header to position oil drain plug (A) at its lowest point.

b. Place a suitable container (approximately one US gallon [4 liters]) under gearbox drain to collect oil.

c. Remove drain plug (A) and filler plug (B), and allow oil to drain.

d. Replace drain plug (A), and remove oil level plug (C).

e. Add SAE 85W-140 oil at (C) until it runs out of hole at (A). Gearbox holds approximately 5 US pints (2.5 liters).

f. Replace oil level plug (B) and filler plug (C).

8.5 HYDRAULICS

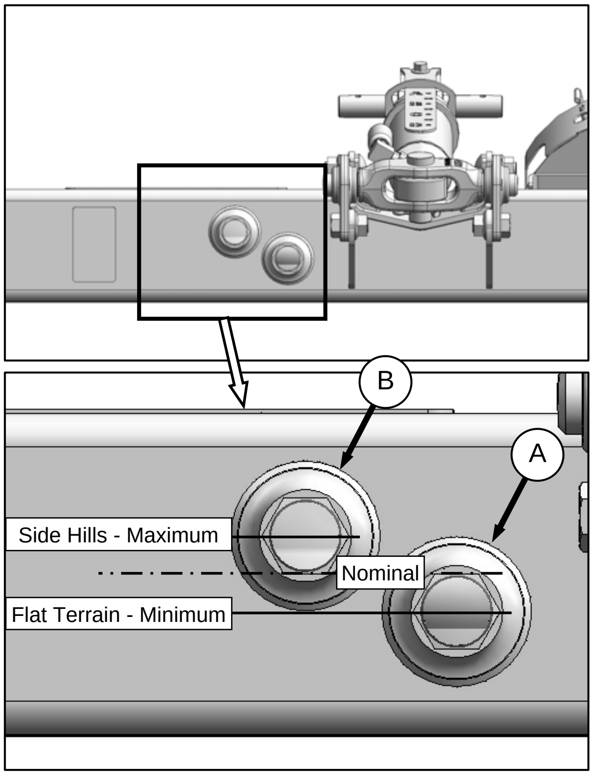
The CA25 Combine Adapter's hydraulic system provides oil for the header draper and knife drives as well as the adapter feed draper.

Reel hydraulics are provided by the combine.

8.5.1 Reservoir

The adapter frame is used as a reservoir. Refer to Section 8.3.4 Recommended Fluids and Lubricants for proper oil.

8.5.1.1 Oil Level



Check oil level every 25 hours at sights (A) and (B) with cutterbar just touching ground. Check when oil is cold, and with center-link retracted.

- **Nominal - Normal Terrain:** Maintain level so lower sight (A) is full, and upper sight (B) is empty.
- **Maximum - Hilly Terrain:** Maintain level so lower sight (A) is full, and upper sight (B) is up to one-half filled.
- **Minimum - Level Ground:** For slopes of 6° or less, oil level may be kept slightly lower if desired. Maintain level so lower sight (A) is one-half filled or higher.

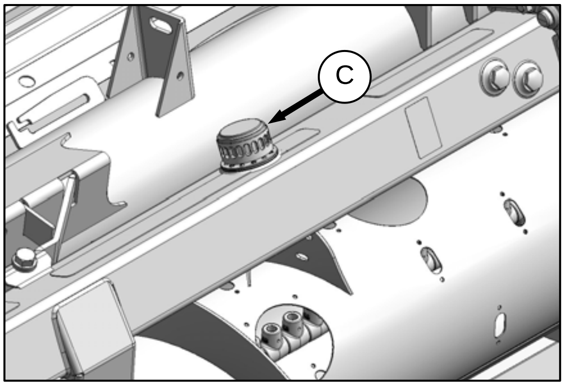
NOTE

When ambient temperatures are above 95°F (35°C), to prevent overflow at breather under operating temperatures, it may be necessary to lower oil level slightly.

8.5.1.2 Adding Hydraulic Oil

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



a. Turn filler cap (C) counterclockwise until loose, and remove cap.

b. Add warm (room temperature) SAE 15W-40 oil to required level. Refer to Section 8.3.4 Recommended Fluids and Lubricants for proper oil.

IMPORTANT

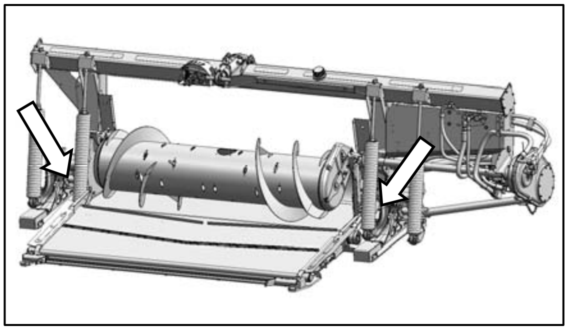
Warm (room temperature) oil will flow through the screen better than cold oil. DO NOT REMOVE THE SCREEN.

c. Re-install filler cap. Hand-tighten.

8.5.1.3 Changing Hydraulic Oil in Reservoir

NOTE

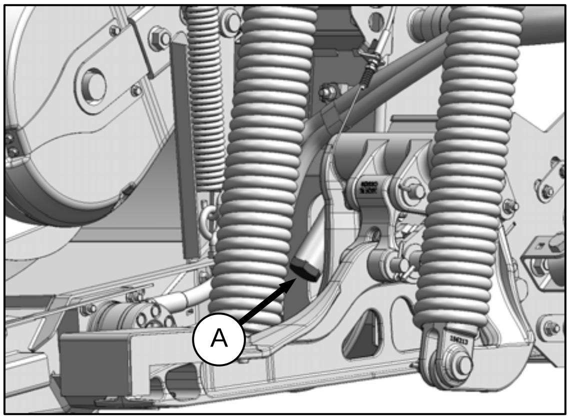
Change hydraulic oil every 1000 hours or 3 years.



There is a drain plug at the bottom of each side frame.

a. Detach header from adapter. Refer to Section 7.3 HEADER ATTACHMENT/DETACHMENT.

b. Detach adapter from combine. Support adapter on blocks. Refer to Section 7.3 HEADER ATTACHMENT/DETACHMENT.



c. Place a suitable container (at least 16 US gallons [60 liters]) under the two drains (A) to collect oil.

d. Using a 1-1/2 inch hex socket with extension, remove drain plugs (A).

e. Replace drain plugs when reservoir is empty.

f. Fill with 16 US gallons (60 liters) of clean SAE 15W-40 oil. Refer to previous section for filling procedures.

8.5.2 Hydraulic Oil Filter

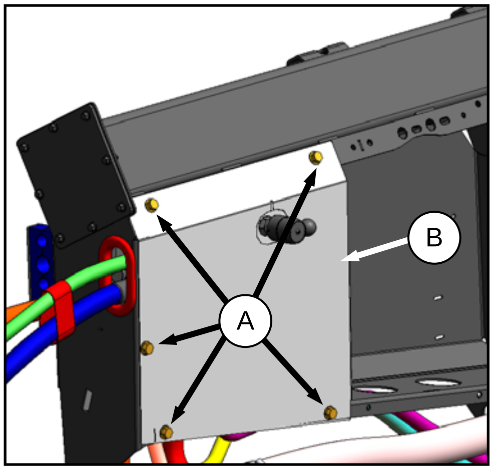
NOTE

Change hydraulic oil filter after the first 50 hours of operation, and every 250 hours thereafter. MD #123989 can be obtained from your MacDon Dealer.

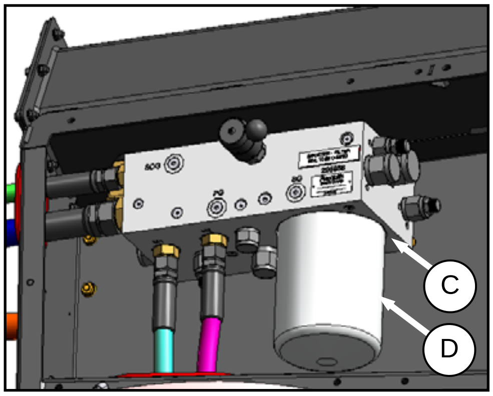
To change hydraulic oil filter, proceed as follows:

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



a. Remove five screws (A), and remove panel (B).



b. Clean around mating surfaces of filter and valve block (C).
c. Remove spin-off filter (D), and clean the exposed filter port in valve block.
d. Apply a thin film of clean oil to the O-ring provided with the new filter.
e. Turn filter into the valve block until O-ring contacts mating surface. Tighten filter an additional 1/2 to 3/4 turn by hand.

IMPORTANT

Do NOT use a filter wrench to install filter. Over-tightening can damage O-ring and filter.

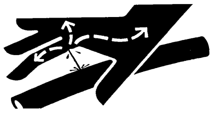
f. Re-install panel (B) with screws (A).

8.5.3 Hoses and Lines

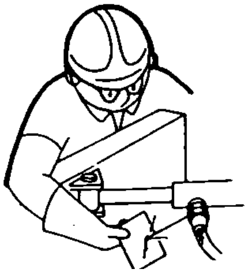
Check hydraulic hoses and lines daily for signs of leaks.

WARNING

- **Avoid high-pressure fluids. Escaping fluid can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body away from pin- holes and nozzles which eject fluids under high pressure.**



- **If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result.**



- **Use a piece of cardboard or paper to search for leaks.**

IMPORTANT

Keep hydraulic coupler tips and connectors clean. Dust, dirt, water and foreign material are the major causes of hydraulic system damage.

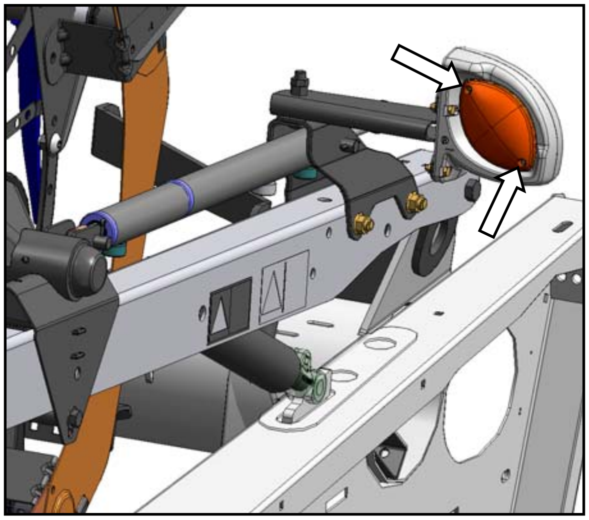
DO NOT attempt to service hydraulic system in the field. Precision fits require WHITE ROOM CARE during overhaul.

8.6 ELECTRICAL

a. Use electrical tape and wire clips as required to prevent wires from dragging or rubbing.

b. Keep lights clean, and replace defective bulbs.

c. To replace light bulbs:



1. Using a Phillips screwdriver, remove screws from fixture, and remove plastic lens.
2. Replace bulb, and re-install plastic lens and screws.

NOTE

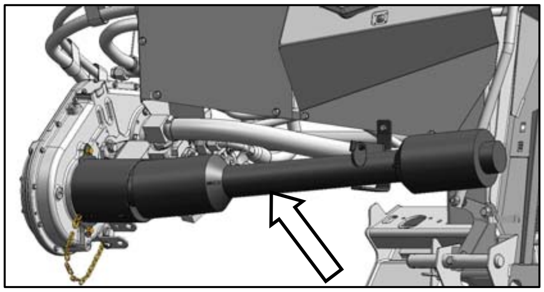
Bulb Part Numbers: Use Bulb Trade #1156 for amber clearance lights and #1157 for red tail light (Slow Speed Transport option).

#1156 is 21W (12V).

#1157 is 21/5W (12V).

8.7 MAIN DRIVE

8.7.1 Driveline Removal

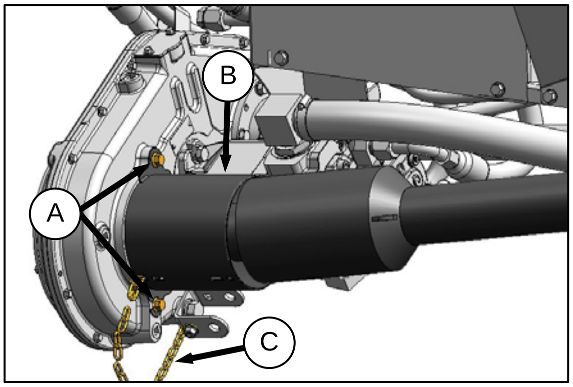


The main driveline normally remains attached to the adapter, and is stored on the hook provided when not in use.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. If adapter is attached to combine, remove driveline from combine by pulling the quick disconnect collar to release driveline yoke at combine shaft.



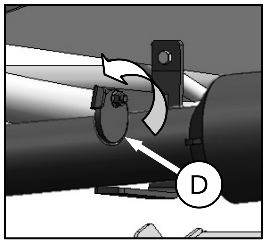
b. Remove two nuts (A) attaching shield (B) to gearbox.

c. Slide shield over poly driveline shield to expose quick disconnect on gearbox. Do NOT disconnect tether (C).

d. Pull quick disconnect collar to release driveline yoke, and pull driveline off shaft.

e. Slide shield (B) off driveline.

f. Rotate disc (D) on adapter driveline storage hook, and remove the driveline from hook.



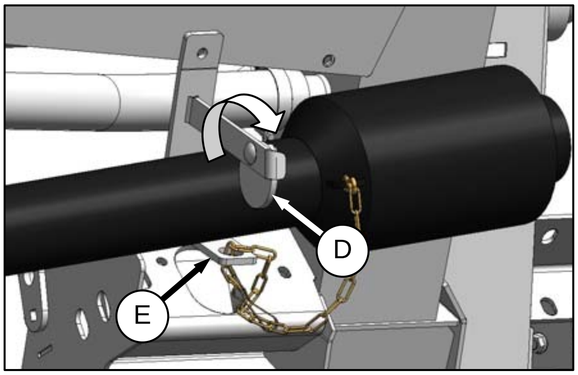
8.7.2 Driveline Installation

IMPORTANT

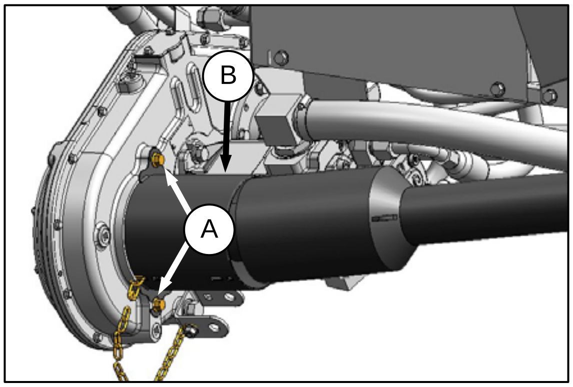
If combine output shaft splines match adapter input shaft splines, ensure driveline is installed with longer guard at adapter gearbox end.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



a. Slide driveshaft in hook (E) so that disc (D) drops to secure driveshaft.



b. Slide shield (B) over driveline.

c. Locate driveline quick disconnect onto adapter gearbox shaft, pull back collar, and slide onto shaft until yoke locks onto shaft. Release collar.

d. Position shield (B) on gearbox, and secure with nuts (A).

e. Re-connect other end to combine if necessary.

8.7.3 Guard Removal

The main driveline guard normally remains attached to the driveline.

If removal is required for maintenance, proceed as follows:

CAUTION

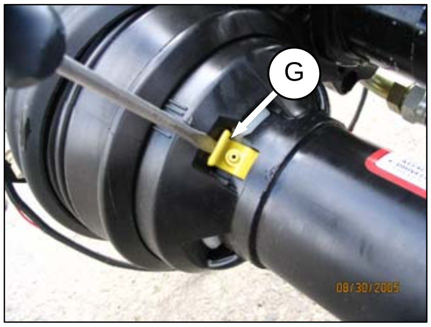
Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

NOTE

The driveline does not need to be removed from the adapter in order to remove the driveline guard.

a. Rotate disc (D) on adapter driveline storage hook (E), and remove driveline from hook.

b. Lift combine end of driveline (F) from hook, and extend driveline until it separates. Hold adapter end of driveline to prevent it from dropping and hitting the ground.



c. Release grease zerk/lock (G) with a screwdriver.

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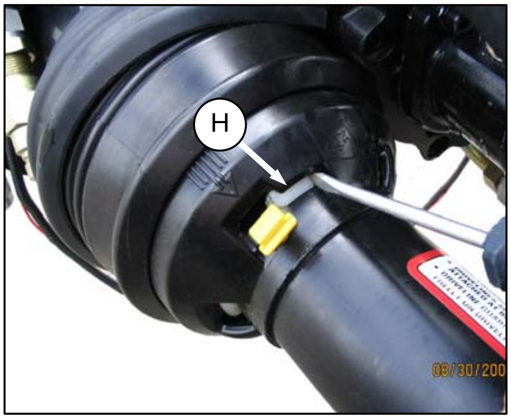
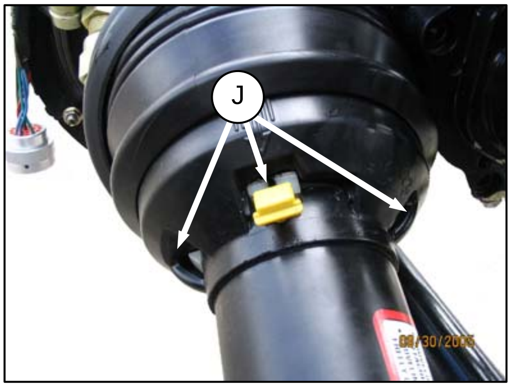


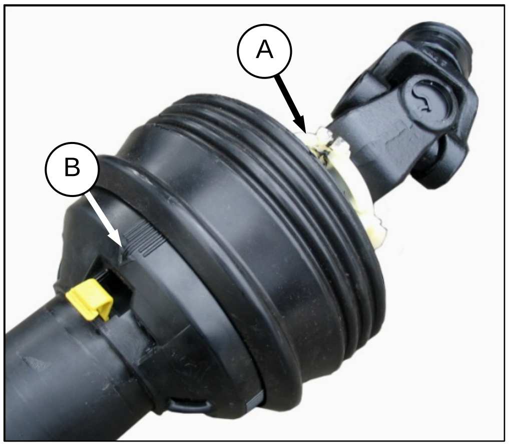


d. Rotate guard locking ring (H) counterclockwise with a screwdriver until lugs (J) line up with slots in guard.

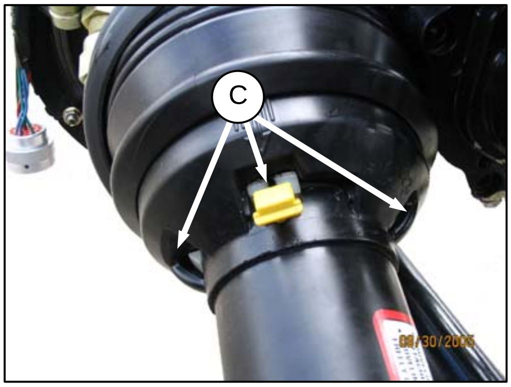
e. Pull guard off driveline.

f. Repeat above steps c. to e. for the other driveline guard.

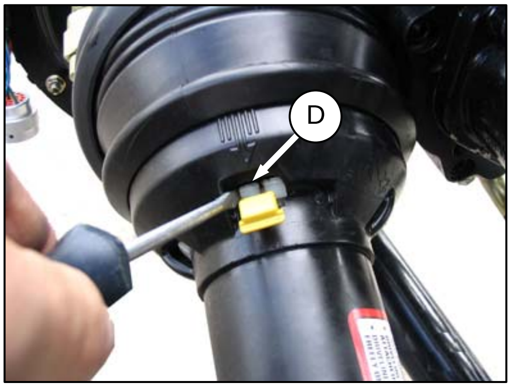
8.7.4 Guard Installation



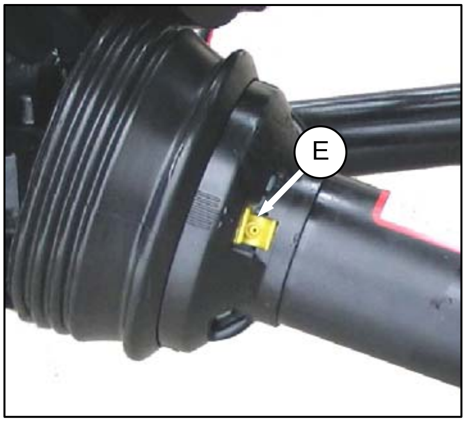
a. Slide guard onto driveline, and line up slotted lug on locking ring (A) with arrow (B) on guard.



b. Push guard onto ring until locking ring is visible in slots (C).



c. Rotate ring (D) clockwise with a screwdriver to lock ring in guard.



d. Push grease zerk (E) back into guard.

e. Repeat steps a. to d. for the other guard.

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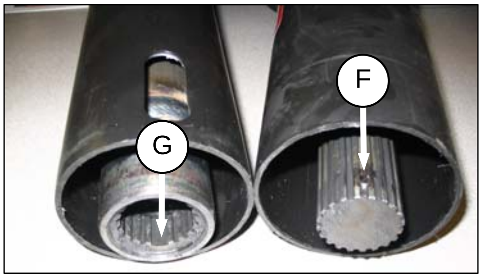
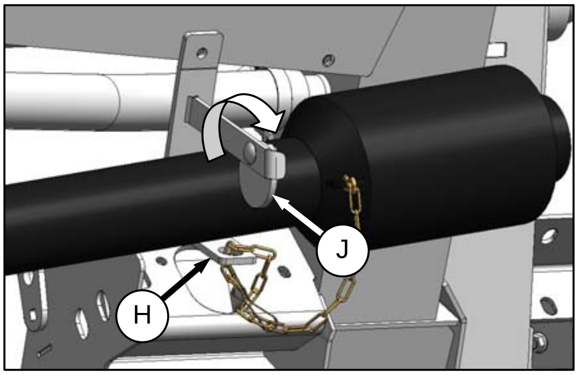
f. Re-assemble driveline.



NOTE

The splines are keyed so that universals are aligned. Align weld (F) with missing spline (G) when assembling.



g. Slide driveshaft in hook (H) so that disc (J) drops to secure driveshaft, or connect to combine.

8.7.5 Gearbox Drive Chain Adjustment

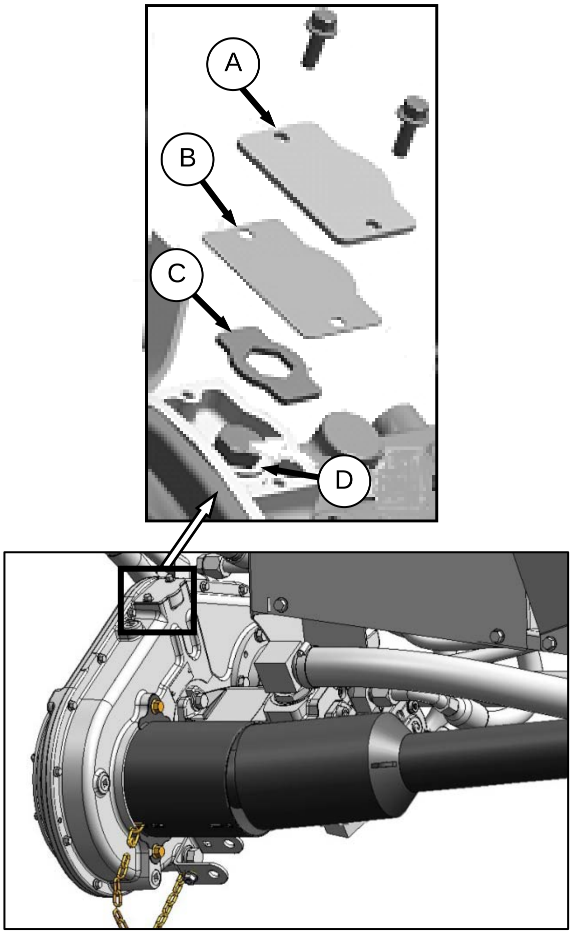
A sprocket on main drive input shaft from combine drives another shaft to auger.

To adjust tension on chain in main gearbox, proceed as follows:

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. Lower header, stop engine, and remove key.



b. Remove chain adjusting cover (A). Be sure gasket (B) is not damaged.

c. Remove retainer plate (C).

d. Tighten bolt (D) to 60 in·lbf (6.8 N·m), Then back off bolt 1-2/3 turns.

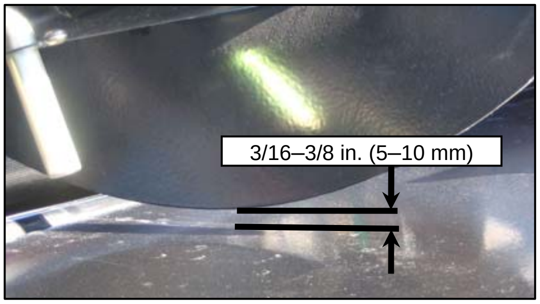
e. Re-install retainer plate (C).

f. Re-install chain adjusting cover (A) and gasket (B). Torque hardware to 84 in·lbf (9.5 N·m).

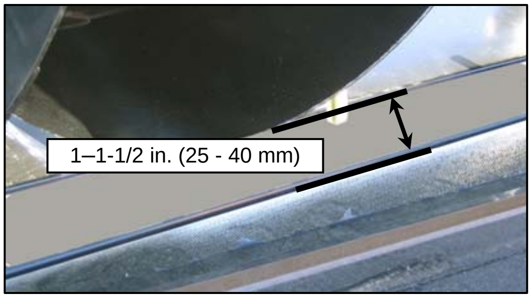
8.8 AUGER

8.8.1 Auger Pan Clearance

Adapters are factory-set to the proper auger clearances to the pan and feed draper.



PAN CLEARANCE AT STEEPEST HEADER ANGLE



FEED DRAPER CLEARANCE AT FLATEST HEADER ANGLE

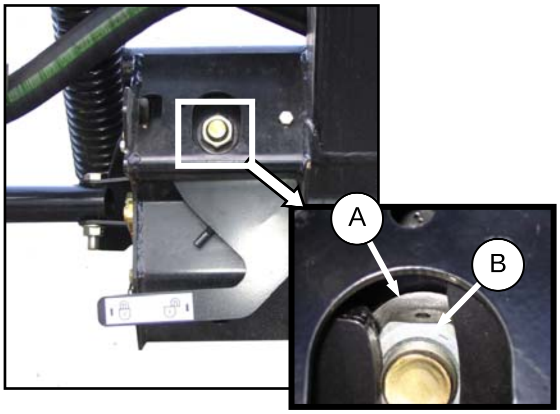
IMPORTANT

It is important that these clearances are maintained. Too little clearance may result in the tines or flighting contacting and damaging the draper or feed pan under certain orientations of the header.

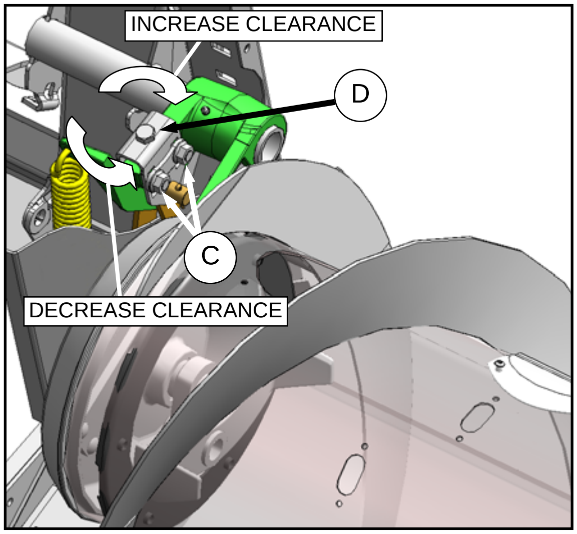
Look for evidence of contact when greasing the adapter.

Should adjustment to the auger be necessary, proceed as follows:

a. Extend center-link to maximum for steepest header angle, and fully lower the header.



b. Check that adapter float linkage is on downstops (washer (A) and nut (B) cannot be moved).



c. Loosen two nuts (C).

d. Turn bolt head (D) clockwise to raise auger and increase pan/draper clearance.

e. Repeat for other end of auger.

f. Check clearances, and re-adjust as required.

g. Tighten nuts (C) on both ends of auger.

8.8.2 Auger Drive Chain Adjustment

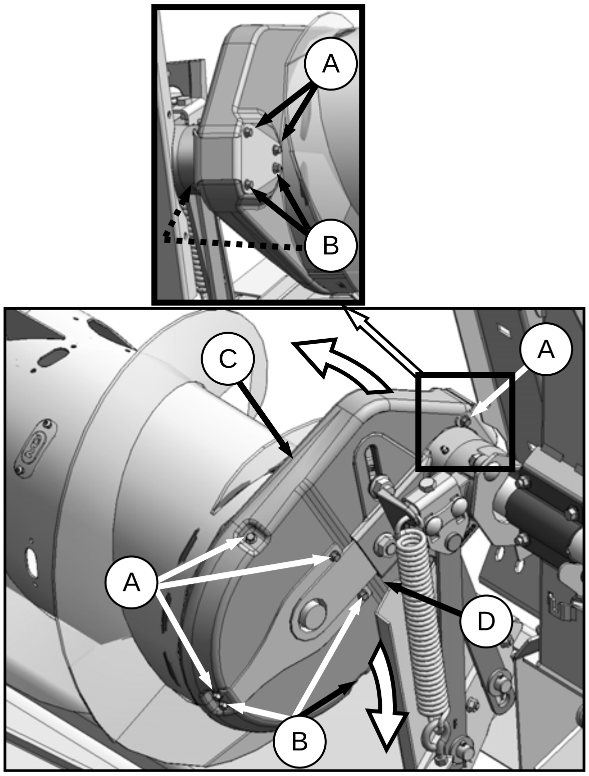
The auger is chain-driven from adapter drive system by a sprocket that is attached to side of the auger.

To adjust chain tension, proceed as follows:

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

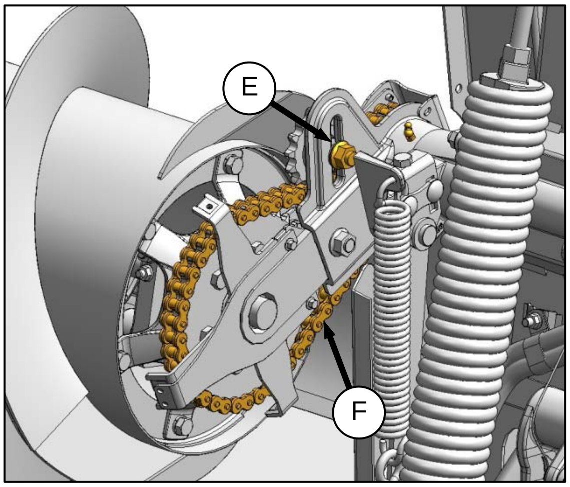
a. Detach combine from adapter. Refer to Section 7.3 HEADER ATTACHMENT/DETACHMENT.



b. Remove six bolts (A), securing top cover.

c. Remove six bolts (B) securing bottom cover.

d. Hinge covers (C) and (D) forward, and remove to expose drives.



e. Loosen bolt (E) securing idler sprocket.

f. Rotate auger in reverse to take up slack in lower strand of chain (F).

g. Push idler sprocket down to eliminate remaining slack in upper strands.

h. Rotate auger back and forth to check slack, and repeat above step if necessary. A slight amount of slack is acceptable.

NOTE

Do NOT use excessive force on idler to tighten chain.

i. Tighten idler bolt (E), and torque to 215 ft·lbf (290 N·m).

j. If necessary, lubricate the chain with SAE Multi-Purpose High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).

k. To re-install covers (C) and (D), engage inboard lip of cover into auger tube and rotate cover back to engage rear support.

l. Replace and tighten bolts (A) and (B).

8.8.3 Auger Drive Chain Replacement

The chain tensioner can only take up slack for a single pitch. When the chain has worn or stretched beyond the limits of the tensioner, the chain should be replaced, or removed to replace the connector link with an offset half link.

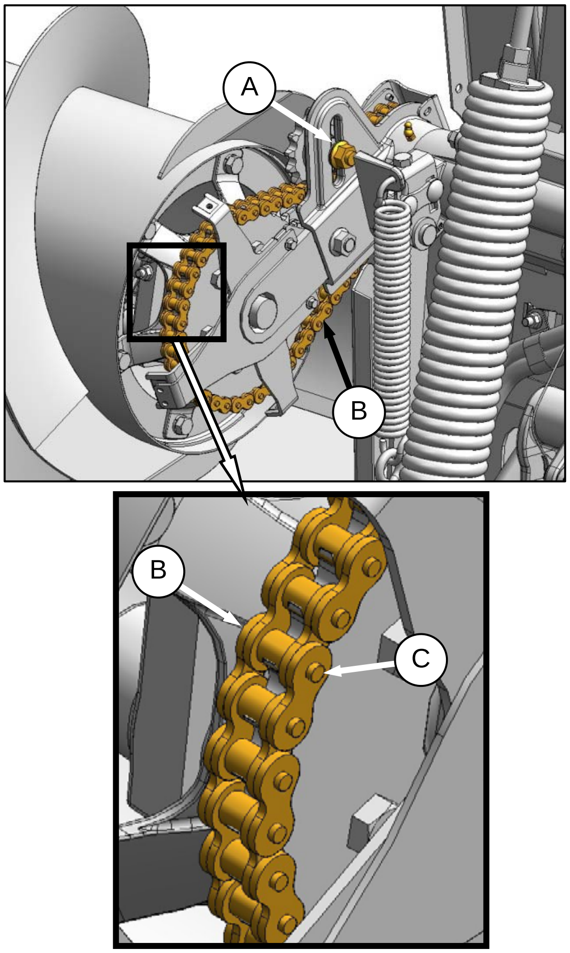
CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. Detach header from combine. Refer to Section 7.3 HEADER ATTACHMENT/DETACHMENT.

b. Remove auger chain case. See previous page.

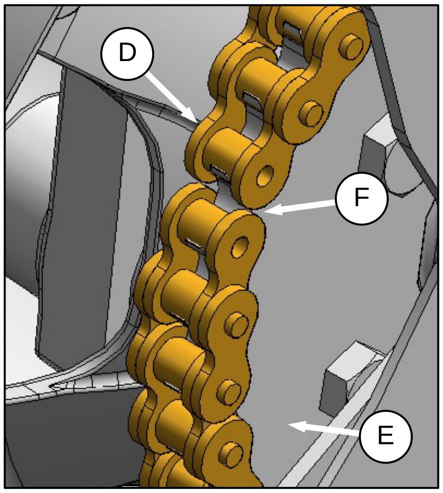
c. Remove chain as follows:



   1. Loosen idler sprocket bolt (A), and raise to uppermost position to release tension on chain (B). Snug up bolt (A) to hold sprocket.
   2. Grind off head of a link rivet (C) on chain (B), punch out the rivet, and remove chain.

d. Install new chain as follows:

   1. Grind off the head from one of the link rivets on the new chain, and punch out rivet to separate the chain.



   2. Feed new chain (D) around drive and driven sprockets and under idler sprocket. Position chain ends so that connection can be made on driven sprocket (E).
   3. Install connector link at (F). Refer to Section 8.3.2 Roller Chain Installation.

e. Tighten chain. Refer to Section 8.8.2 Auger Drive Chain Adjustment.

f. Lubricate the chain with SAE Multi-Purpose High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).

g. Re-install chain case. See step j. on previous page.

8.8.4 *Auger Tine Replacement*

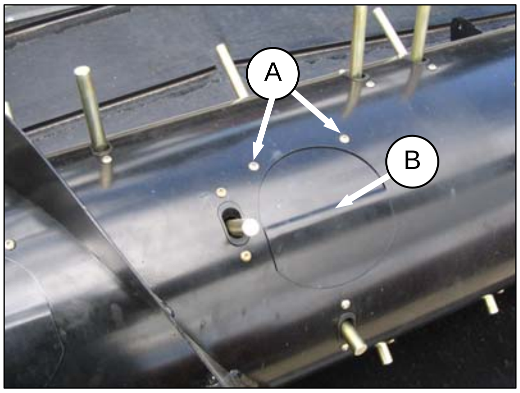
CA25 Combine Adapters are fitted with tines to accommodate a wide variety and sizes of combines.

Some conditions may require the removal or addition of tines for optimal feeding of the crop. In addition, tines that become worn or damaged should be replaced.

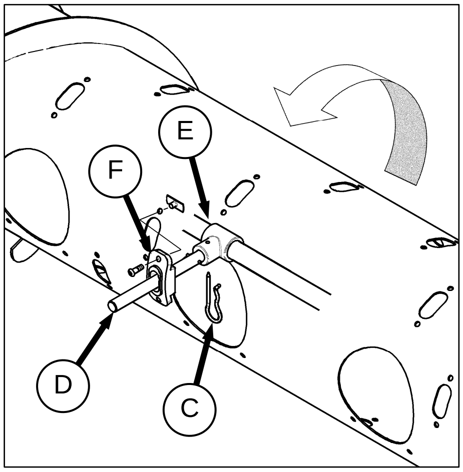
To simplify the procedure, detach header from combine.

Refer to Section 7.3 HEADER ATTACHMENT/ DETACHMENT.

8.8.4.1 Tine Removal

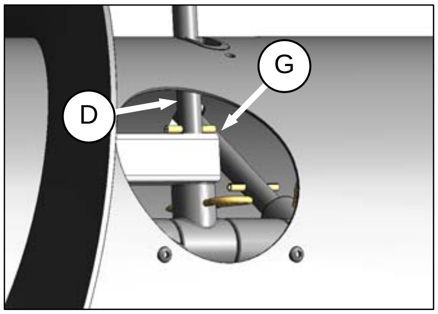


a. Remove screws (A), and remove access cover (B).



b. From inside the auger, remove hairpin (C), and pull tine (D) out of bushing (E).

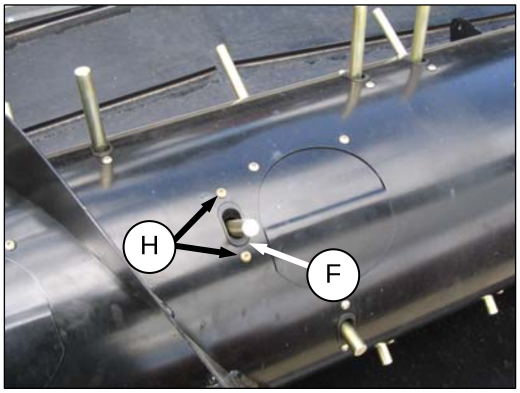
c. From inside the auger, swivel tine away from bushing, pull from plastic guide (F), and remove from auger.



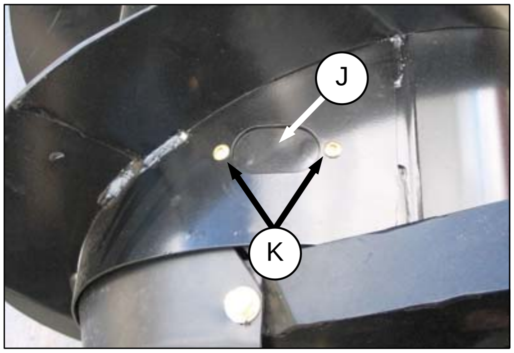
NOTE

If the sixth tine (D) opposite drive side is being replaced, it also must be slipped off drive tube (G). This particular tine cannot be removed for normal operation.

d. If tine is not re-installed, proceed to next step. Otherwise, proceed to Section 8.8.4.2 Tine Installation.



e. Remove screws (H) securing plastic guide (F) to auger, and remove guide from inside auger.

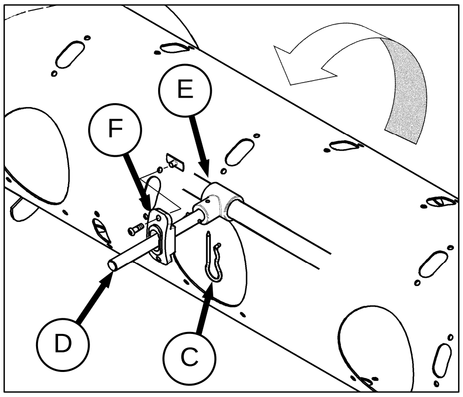


f. Position cover (J) from inside auger over hole, and secure with screws (K). Coat screws with Loctite® #243 (or equivalent), and torque to 75 in·lbf (8.5 N·m).

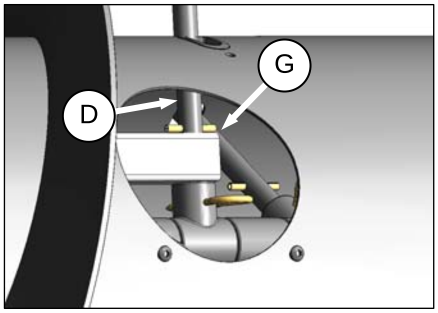
8.8.4.2 Tine Installation

If replacing tine, proceed to step d. Otherwise, proceed to step a.

a. Remove access cover (if applicable).
b. Remove cover at tine location (if applicable).
c. Install plastic guide.



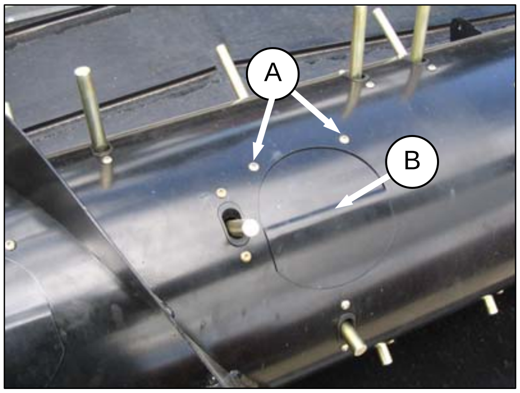
d. Insert tine (D) through plastic guide (F) from inside the auger.
e. Insert tine into bushing (E).



NOTE

The #6 tine (D) must also be inserted through the square tube (G).

f. Secure tine in bushing with hairpin (C). Install hairpin with closed end leading with respect to auger forward rotation.



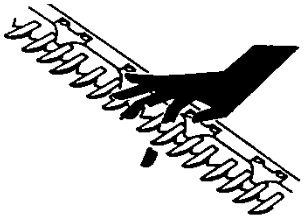
g. Replace access cover (B), and secure with screws (A). Coat screws with Loctite® #243 (or equivalent), and torque to 75 in·lbf (8.5 N·m).

8.9 SICKLE AND SICKLE DRIVE

CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

WARNING



Keep hands clear of the area between guards and sickle at all times.

CAUTION

Wear heavy gloves when working around or handling sickles.

8.9.1 Sickle Sections

Check daily that sections are firmly bolted to the sickle back, and are not worn or broken. Damaged or worn sections leave behind uncut plants.

Coarse serrated sections last longer than fine serrated sections in dirty or sandy conditions.

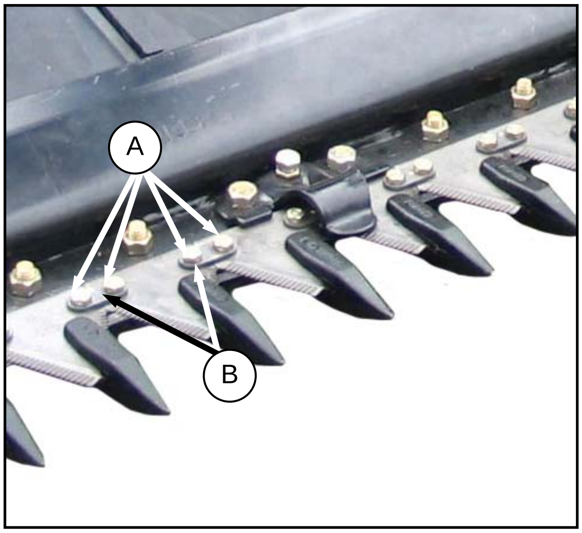
Fine serrated sections perform better in fine stemmed grasses and plants that contain more fibrous stems.

A worn or broken sickle section can be replaced without removing sickle from cutterbar.

Replace sickle section as follows:

NOTE

Stroke sickle as required to expose sickle.



a. Remove lock nuts (A).
b. Remove bars (B), and lift sickle section off knife.

IMPORTANT

Do NOT mix heavy and light sickle sections on same sickle.

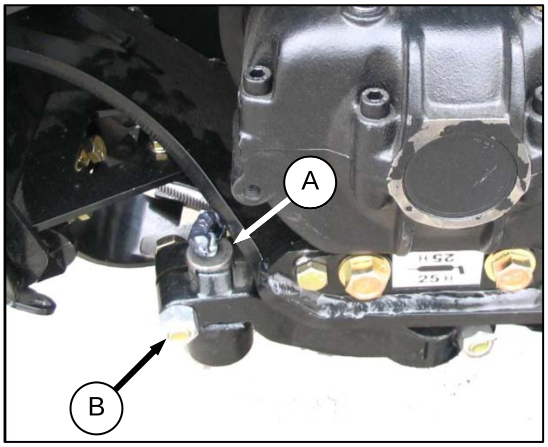
c. Clean any dirt off of sickle back, and position n new sickle section on knife.
d. Re-position bars (B), and install lock nuts (A).
e. Torque nuts to 7 ft·lbf (9.5 N·m).

8.9.2 *Sickle Removal*

WARNING

Stand to rear of sickle during removal to reduce risk of injury from cutting edges. Wear heavy gloves when handling sickle.

a. Stroke sickle to its outer limit, and clean area around sickle head.



b. Remove zerk from pin (A).
c. Remove nut and bolt (B).
d. Insert screwdriver in groove of pin (A), and pry up on sickle head pin to free sickle. Pin does not have to be removed from arm.
e. Seal bearing in sickle head with plastic or tape.
f. Wrap a chain around sickle head, and pull sickle out.

NOTE

For single drive sickles with splice plate, remove bolts from splice plate, and pull sickle out from both ends.

8.9.3 *Sickle Head Bearing Replacement*

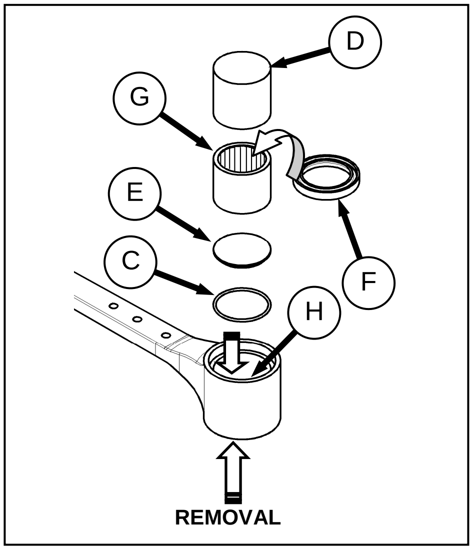
8.9.3.1 Bearing Removal

a. Remove sickle. Refer to previous section.
b. Using a flat-ended tool (D) with approximately the same diameter as the plug (E), tap out the seal (F), bearing (G), and plug from the underside of the head.

NOTE

The seal can be replaced without removing the bearing. When changing seal, check pin and needle bearing for wear. Replace if necessary.

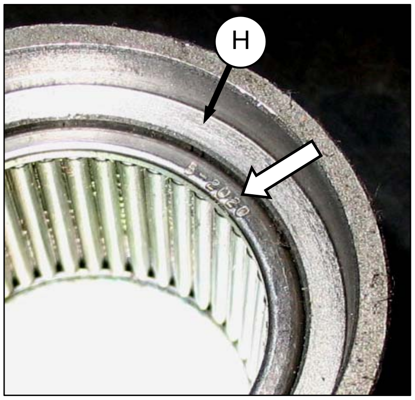
8.9.3.2 Bearing Installation



a. Place O-ring (C) and plug (E) in sickle head.

IMPORTANT

Install the bearing with the stamped end (the end with identification markings) against the tool.



b. Using a flat-ended tool (D) with approximately the same diameter as the bearing (G), push the bearing into the sickle head until the top of the bearing is flush with the step (H) in sickle head.
c. Install seal (F) in top of sickle head with lip facing outwards.

IMPORTANT

To avoid premature sickle head or sickle drive box failure, be sure there is **no** looseness in:

- fit of sickle head pin and needle bearing, and
- fit of sickle head pin and pitman arm.

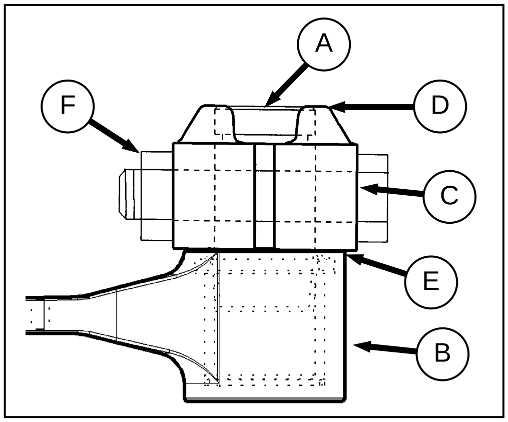
8.9.4 Sickle Installation

WARNING

Stand to rear of sickle during installation to reduce risk of injury from cutting edges. Wear heavy gloves when handling sickle.

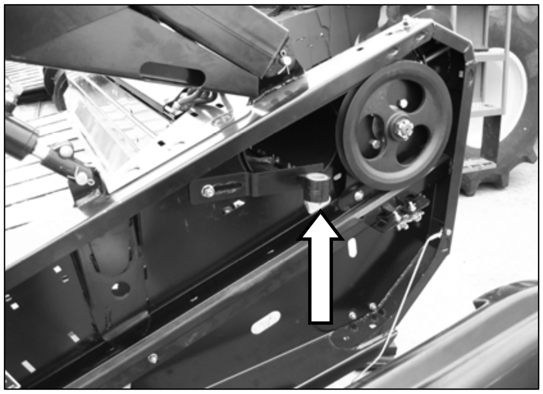
IMPORTANT

Align guards, and re-set sickle hold-downs while replacing sickle.



a. If sickle head pin (A) is installed in sickle head, remove pin.
b. Slide sickle into place, and align sickle head (B) with pitman arm (C).
c. Install sickle head pin (A) in pitman arm, and tap it down into sickle head, ensuring pin is bottomed out in sickle head.
d. Tap underside of sickle head (B) until the pin is flush with upper face (D) of pitman arm and until it just contacts pitman arm (0.010 in. [0.25 mm]) gap (E).
e. Re-install bolt and nut (F).
f. Tighten nut to 160 ft·lbf (220 N·m).
g. Re-install grease zerk in pin.
h. Grease bearing.

8.9.5 Spare Sickle



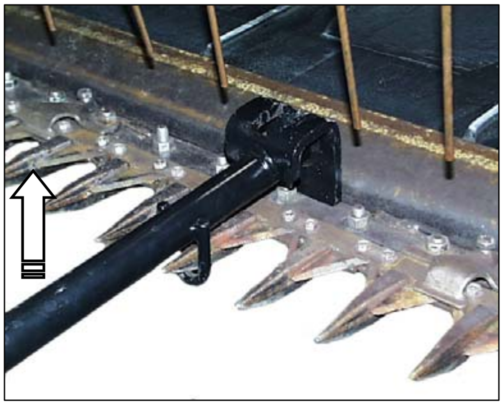
A spare sickle may be stored in the header frame tube at the left end (as shown above). Ensure sickle is secured in place.

8.9.6 Sickle Guards

Check daily that guards are aligned to obtain proper shear cut between sickle section and guard. Sickle sections should contact shear surface of each guard.

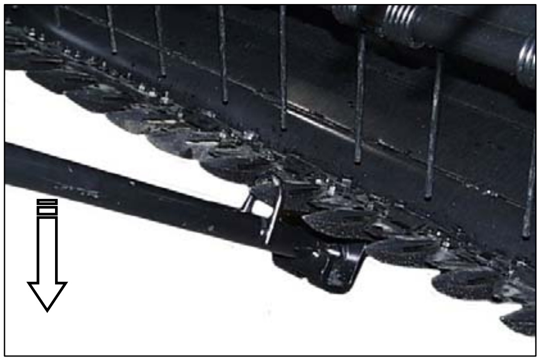
8.9.6.1 Guard Adjustment

To align guards, proceed as follows. The guard straightening tool (MD #140135) is available from your MacDon Dealer.



UPWARD ADJUSTMENT

a. To adjust guard tips upward, position tool as shown, and pull up.



DOWNWARD ADJUSTMENT

b. To adjust tips downward, position tool as shown, and push down.

TIP: If trouble is encountered cutting tangled, or fine-stemmed material, replace lower guards with stub guards, and install a sickle hold-down on every guard.

c. If material is tough to cut, install stub guards with top guard and adjuster plate. A kit is available from your MacDon Dealer. Refer to Section 10.2 STUB GUARD CONVERSION KIT.

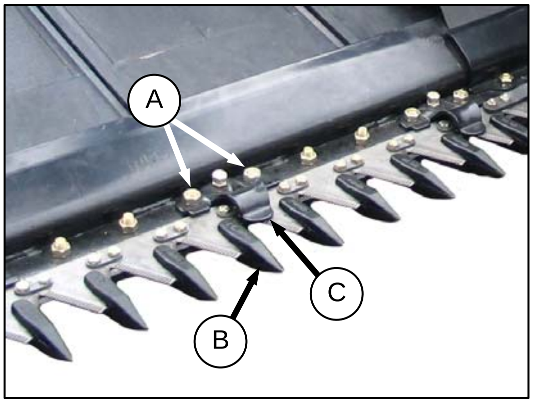
8.9.6.2 Guard Replacement

CAUTION

Always engage reel props before working under reel.

Pointed Guards: Single Knife

a. Stroke sickle so that sickle sections are spaced midway between the guards.



b. Remove two nuts (A) and bolts that attach guard (B) and hold-down (C) (if applicable) to cutterbar.

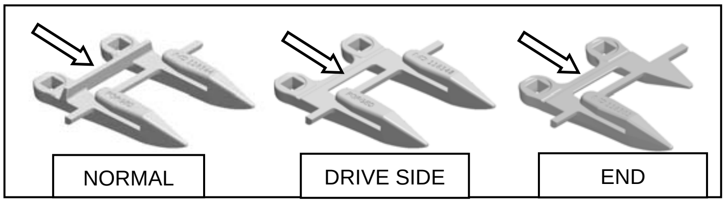
c. Remove guard, hold-down, and poly wear plate (if installed).

d. Position new guard and poly wear plate (if applicable) on cutterbar, and install carriage bolts.

IMPORTANT

The first four outboard guards on drive side(s) of header do not have a ledger plate. Ensure that proper replacement is installed.

e. Install hold-down, and secure with nuts. Tighten nuts to 50 ft·lbf (68 N·m).



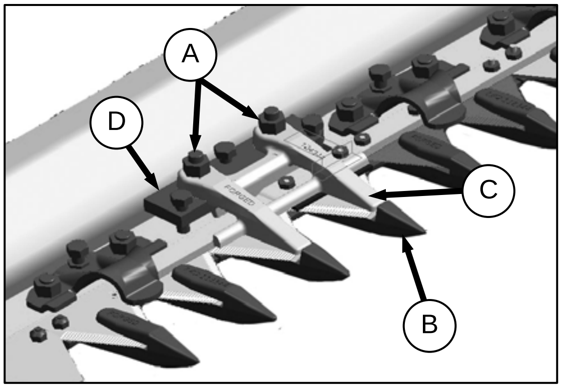
f. Check and adjust clearance between hold-down and sickle. Refer to Section 8.9.7 Sickle Hold-Downs.

Pointed Guards: Double Knife

Refer to previous section for typical guard replacement.

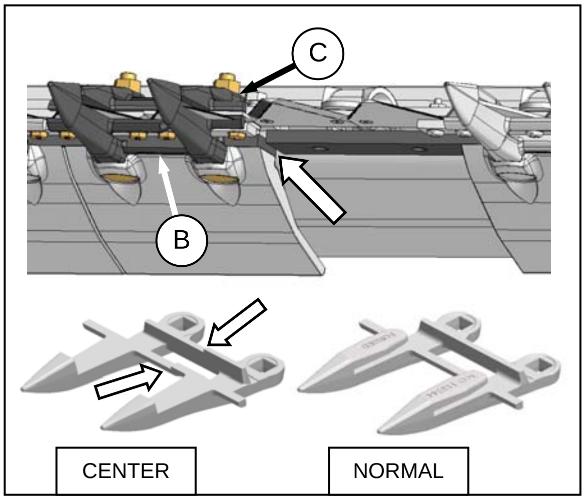
The guard near center of double knife header (where the two sickles overlap) requires a slightly different replacement procedure.

Replace center guard or center top guide as follows:



a. Remove two nuts (A) and bolts that attach guard (B) and top guide (C) to cutterbar.

b. Remove guard, poly wear plate (if installed), top guide (C), and adjuster bar (D).



c. Position poly wear plate (if applicable), replacement guard (B), adjuster bar (D), top guide (C). Install bolts, but do not tighten.

IMPORTANT

Ensure center guard (B) (right of cutterbar split) has offset cutting surfaces.

NOTE

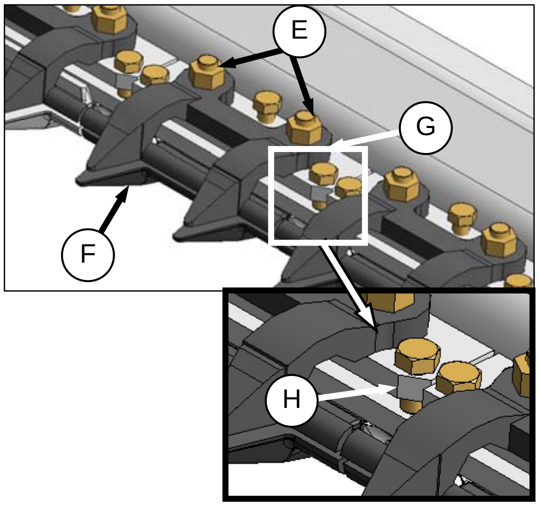
Top guide (C) must accommodate the two overlapping knifes at center guard location on Double Knife header. Ensure replacement is correct part.

d. Check and adjust clearance between hold-down and sickle. Refer to Section 8.9.7 Sickle Hold-Downs.

Stub Guards: Single Knife

Stub guards, complete with top guides and adjuster plates are designed to cut tough crops. Some configurations of the D65 header come equipped with stub guards at the outer ends.

Replace stub guards as follows:



a. Remove the two nuts (E) and bolts that attach guard (F) and top guide (G) to cutterbar.

b. Remove guard, poly wear plate (if installed), top guide, and adjuster bar (H).

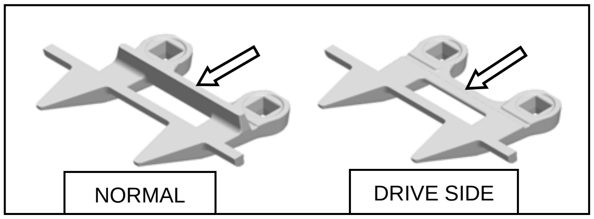
c. Position poly wear plate (if applicable), replacement guard (F), adjuster bar (H), top guide (G), and install bolts. Do not tighten.

IMPORTANT

Note position of mitre on adjuster bar (H). Bar should be re-installed in same position. Mitres should not be adjacent to each other.

IMPORTANT

The first four outboard guards on drive side(s) of the header do NOT have a ledger plate. Ensure that the proper replacement is installed.



d. Check and adjust clearance between top guide and sickle. Refer to Section 8.9.7 Sickle Hold-Downs.

8.9.7 Sickle Hold-Downs

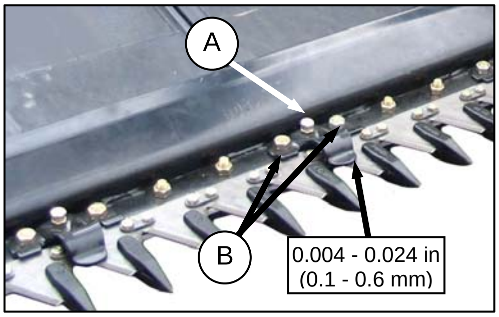
Check daily that sickle hold-downs are set to prevent sickle sections from lifting off guards, but still permit sickle to slide without binding.

NOTE

Guards should be aligned prior to adjusting hold-downs.

8.9.7.1 Pointed Guard Adjustment

a. To adjust the clearance between hold-down and sickle for typical pointed guards:

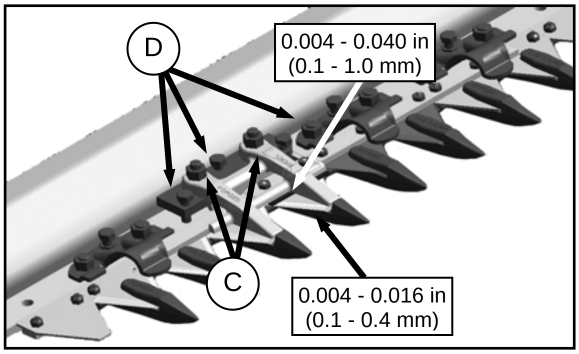


1. Turn the adjuster bolts (A). Using a feeler gauge, clearance from hold-down to sickle section should be 0.004–0.024 in. (0.1–0.6 mm).

NOTE

For larger adjustments, it may be necessary to loosen nuts (B), turn adjuster bolt (A), then re-tighten nuts (B).

b. To adjust clearance between hold-down and sickle:

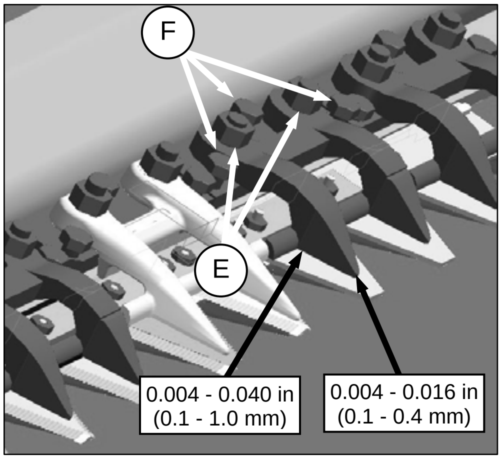


1. Torque nuts (C) to 35 ft·lbf (46 N·m).
2. Turn the adjuster bolts (D). Using a feeler gauge, clearance from hold-down to sickle section should be:
   - 0.004–0.016 in. (0.1–0.4 mm) at guide tip, and
   - 0.004–0.040 in. (0.1–1.0 mm) at rear of guide.
3. Torque nuts (C) to 53 ft·lbf (72 N·m).

c. After adjusting all hold-downs, run header at a low engine speed, and listen for noise due to insufficient clearance. Insufficient clearance will also result in overheating of the sickle and guards. Re-adjust as necessary.

8.9.7.2 Stub Guard Adjustment

To adjust the clearance between the hold-down and sickle for all stub guards:



a. Torque nuts (E) to 35 ft·lbf (46 N·m).

b. Turn the adjuster bolts (F). Using a feeler gauge, clearance from hold-down to sickle section should be:
   - 0.004–0.016 in. (0.1–0.4 mm) at guide tip, and
   - 0.004–0.040 in. (0.1–1.0 mm) at rear of guide.

c. Torque nuts (E) to 53 ft·lbf (72 N·m).

8.9.8 Sickle Drive Belts: Non-Timed Drive

This section applies to Single Knife headers, and 40 and 45 ft. Double Knife headers.

For Double Knife headers with timed drives, refer to Section 8.9.9 Double Knife Drive Belts: Timed Drive.

8.9.8.1 Tension Adjustment

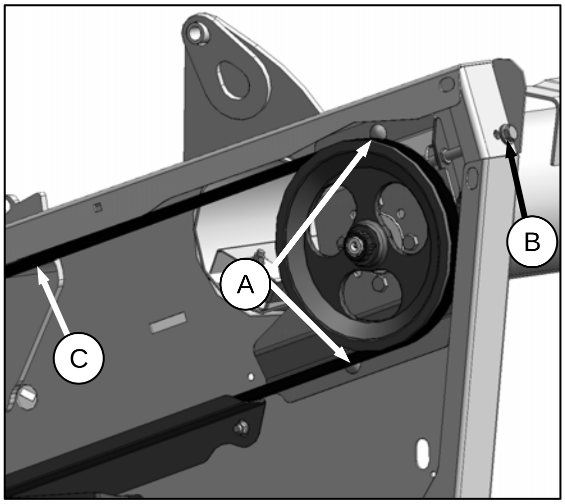
IMPORTANT

To prolong belt and drive life, do NOT over-tighten belt.

CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

a. Open endshield.



LH SHOWN - RH OPPOSITE FOR DK

b. Loosen two bolts (A) on sickle drive mounting bracket.

c. Turn adjuster bolt (B) to move drive motor until a force of 20 lbf (80 N) deflects belt (C) 3/4 in. (18 mm) at mid-span.

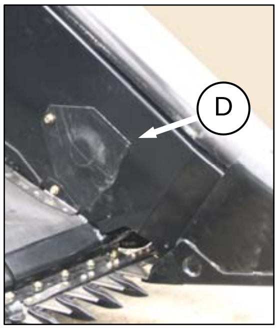
d. Tighten jam nut at (B) and bolts (A) on drive mounting bracket.

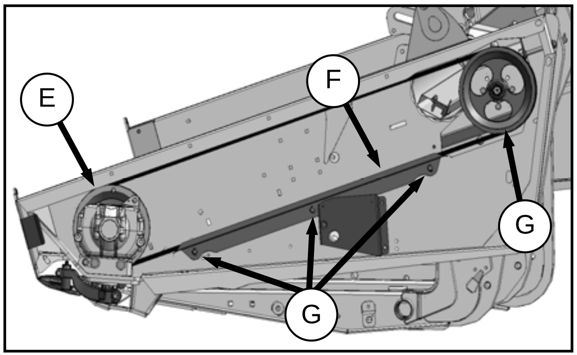
e. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

8.9.8.2 Removal

a. Loosen sickle drive belt using procedure in previous section so that belt (C) can be slipped off drive pulley.

b. Remove bolt in plate (D) in endsheet at sickle drive box, and remove plate. This provides clearance between pulley and endsheet for the belt when it is removed.





LH SHOWN - RH OPPOSITE FOR DK

c. Slip belt over and behind sickle drive box pulley (E), and remove belt. Utilize the notch in pulley to assist in removing the belt.

8.9.8.3 Installation

a. Route sickle drive belt (C) around sickle drive box pulley (E) and sickle drive pulley (G). Utilize the notch in the pulley to assist in installing the belt.

NOTE

When installing new belt, never pry belt over pulley. Be sure drive motor is fully forward, and then tension the belt.

b. Tighten belt. Refer to Section 8.9.8.1 Tension Adjustment (in previous column).

c. Check clearance between belt (C) and belt guide (F). The measurement should be 0.04 in. (1 mm). Adjust as follows:
   1. Ensure belt is properly tensioned.
   2. Loosen bolts (G), and adjust position of guide (F) as required.
   3. Tighten bolts.

d. Re-install plate (D), and secure with bolt and nut.

e. Close endshield.

8.9.9 Double Knife Drive Belts: Timed Drive

This section applies to 35 ft. and smaller Double Knife headers with timed drives. For Single Knife headers and non-timed Double Knife headers, refer to Section 8.9.8 Sickle Drive Belts: Non-Timed Drive.

8.9.9.1 Left End Drive

Remove endshield at left end of header. Refer to Section 7.2.3 Endshields.

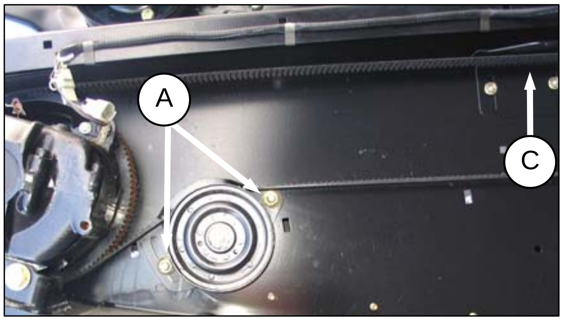
CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

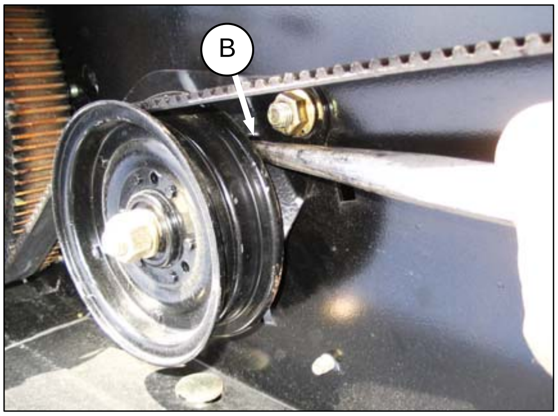
Tension Adjustment: Timing Belt

IMPORTANT

To prolong belt and drive life, do NOT over-tighten belt.

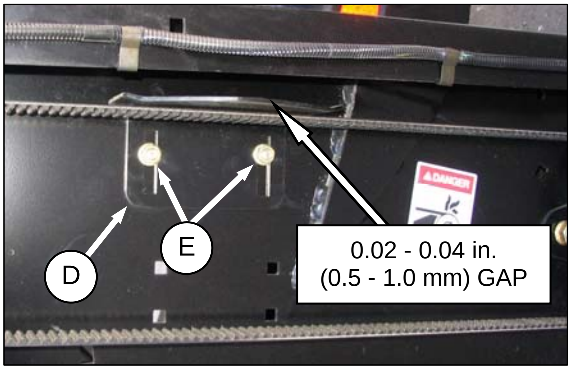


a. Loosen two nuts (A) on sickle drive belt idler bracket.



b. Insert a long punch (or equivalent) into hole (B) in idler bracket, and pry downward until a force of 6 lbf (27 N) deflects timing belt 1/2 in. (13 mm) at mid-span (C).

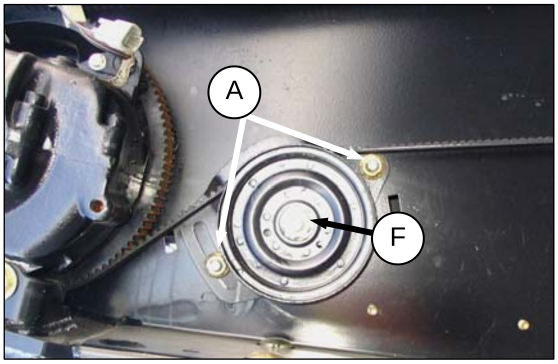
c. Tighten nuts (A) on idler mounting bracket.



d. Check clearance between belt and belt guide (D). The measurement should be 0.02–0.04 in. (0.5 -1.0 mm). Adjust as follows:
   1. Ensure belt is properly tensioned.
   2. Loosen bolts (E), and adjust position of guide as required.
   3. Tighten bolts.

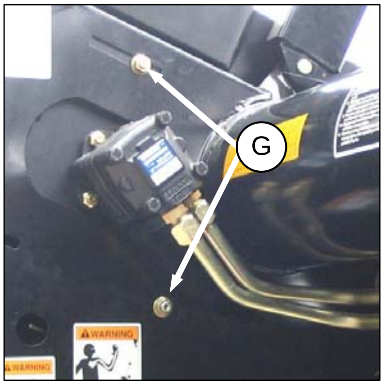
e. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

Removal: Left End Timing Belt



a. Loosen two nuts (A) on belt idler bracket to relieve tension on belt.

b. Loosen nut (F) on idler pulley, and slide idler down to loosen belt.



c. Loosen two bolts (G) on endsheet.

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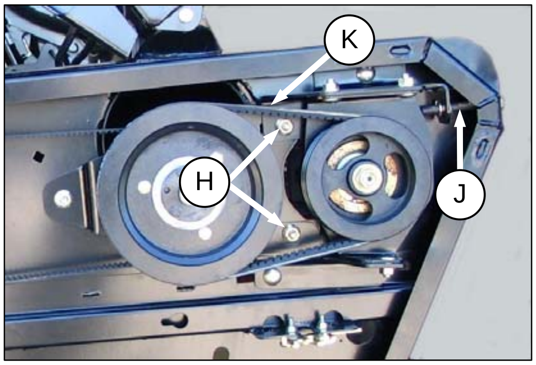
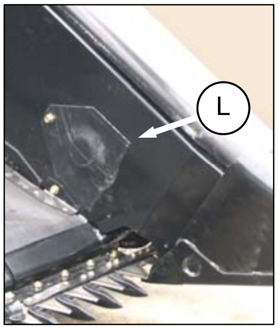


d. Loosen two bolts (H) on sickle drive mounting bracket.

e. Turn adjuster bolt (J) to loosen the two V-belts (K), and remove belts.

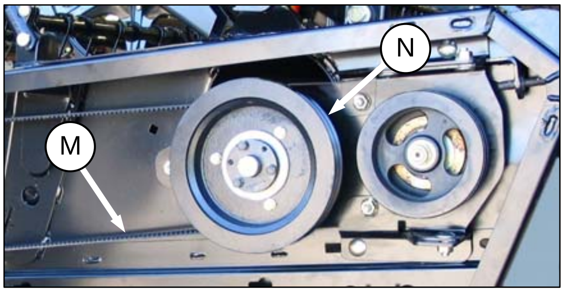


f. Remove bolt in plate (L) in left endsheet at sickle drive box, and remove plate. This provides clearance between pulley and endsheet for the belt when it is removed.

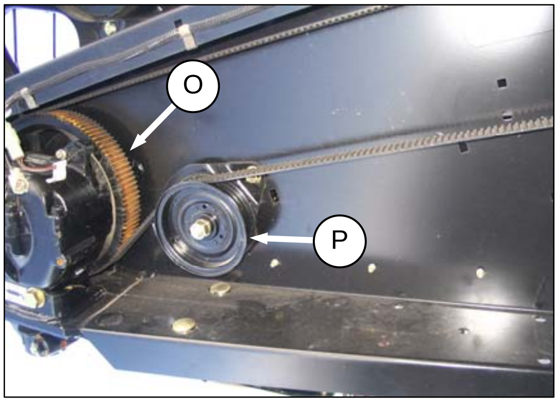
g. Slip timing belt off sickle drive box pulley, and route belt between sickle drive box pulley and endsheet.

h. Remove belt from drive pulley.

Installation: Left End Timing Belt



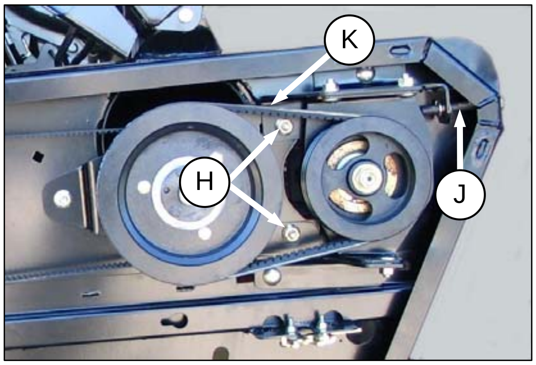
a. Locate timing belt (M) onto drive pulley (N).



b. Route belt between sickle drive box pulley (O) and endsheet, and locate on sickle drive box pulley and over idler (P).

NOTE

When installing new belt, never pry belt over pulley. Be sure adjusting device is fully loosened, then tension belt.



c. Position V-belts (K) onto drive pulleys.

d. Turn adjuster bolt (J) to move drive motor until a force of 12 lbf (53 N) deflects V-belts (K) 1/8 in. (3 mm) at mid-span.

e. Tighten two bolts (H) on drive mounting brackets.

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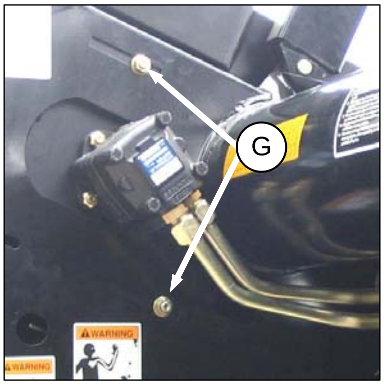
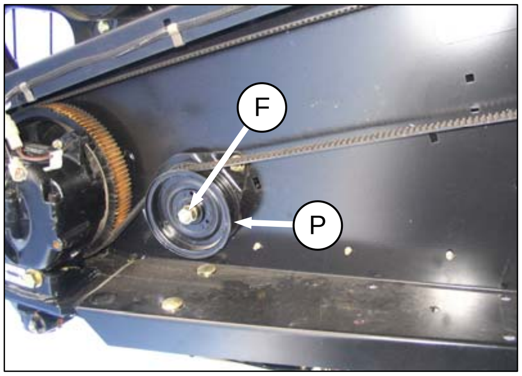
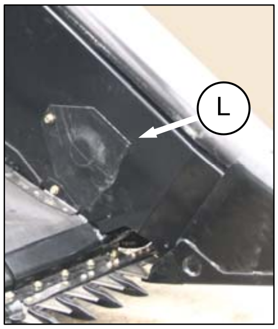


f. Tighten the two bolts (G) on the endsheet.



g. Slide idler (P) up until most of the belt slack is taken up. Tighten idler nut (F).



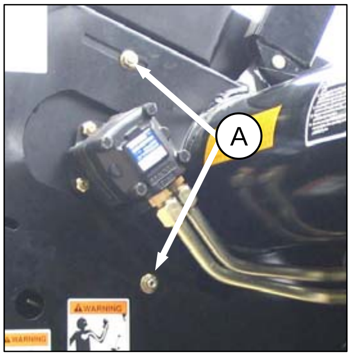
h. Adjust the timing belt tension and check belt clearance to belt guide. See 8.9.9.1 Tension Adjustment: Timing Belt.

i. Re-install plate (L) in the endsheet.

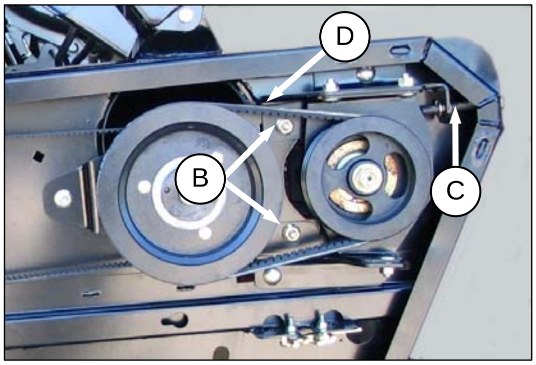
j. Close left endshield.

k. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

Tension Adjustment: Left Drive Double V-Belts



a. Loosen two bolts (A) on endsheet.



b. Loosen two bolts (B) on sickle drive mounting bracket.

c. Turn adjuster bolt (C) to move drive motor until a force of 12 lbf (53 N) deflects V-belts (D) 1/8 in. (3 mm) at mid-span.

d. Tighten bolts (A) and (B).

e. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

Removal: Left Drive V-Belts

a. Loosen two bolts (A) on endsheet.

b. Loosen two bolts (B) on sickle drive mounting bracket.

c. Turn adjuster bolt (C) to loosen the two V-belts (D), and remove belts.

Installation: Left Drive V-Belts

IMPORTANT

Sickle drive V-belts are a matched set. Replace both drive belts even if only one needs replacing. Do NOT pry belt over pulley, loosen adjusting device sufficiently to allow easy installation.

a. Install belts (D) onto drive pulleys.

b. Turn adjuster bolt (C) to move drive motor until a force of 12 lbf (53 N) deflects V-belts (D) 1/8 in. (3 mm) at mid-span.

c. Tighten bolts (A) and (B) on drive mounting bracket.

d. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

8.9.9.2 Right End Drive

CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

Tension Adjustment: Timing Belt

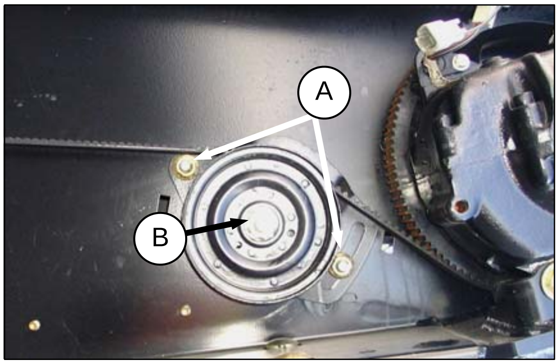
IMPORTANT

To prolong belt and drive life, do NOT over-tighten belt.

Refer to 8.9.9.1. Left End Drive: Tension Adjustment: Timing Belt.

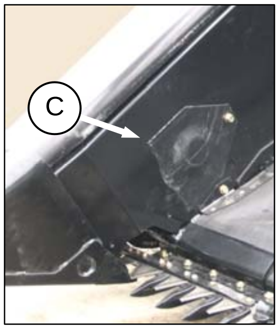
Removal: Right End Timing Belt

a. Open right endshield.



b. Loosen two nuts (A) on belt idler bracket to relieve tension on belt.

c. Loosen nut (B) on idler pulley, and slide idler down to loosen belt.

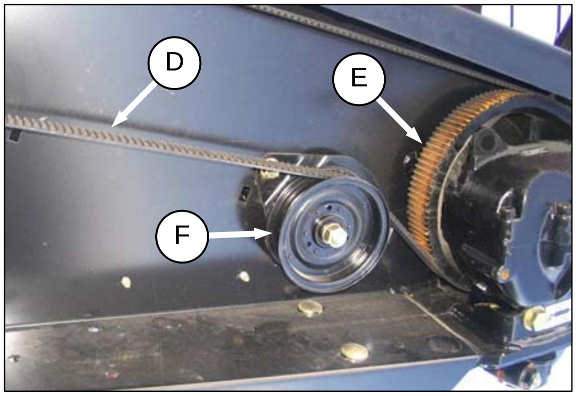


d. Remove bolt in plate (C) in right endsheet at sickle drive box, and remove plate. This provides clearance between pulley and endsheet for belt when it is removed.

e. Slip timing belt off sickle drive box pulley, and route belt between sickle drive box pulley and endsheet.

f. Remove belt from drive pulley.

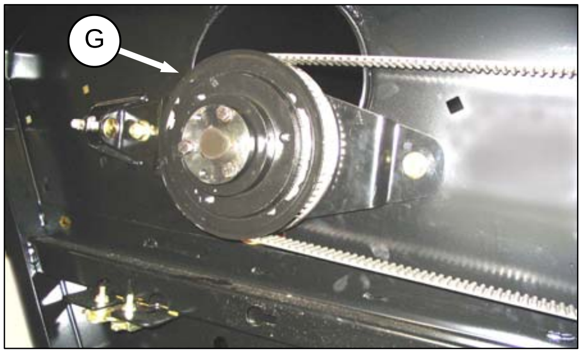
Installation: Right End Timing Belt



a. Route timing belt (D) between sickle drive box pulley (E) and endsheet, and locate on sickle drive box pulley, and over idler (F).

NOTE

When installing new belt, never pry belt over pulley. Be sure adjusting device is fully loosened, then tension belt.



b. Position timing belt on drive pulley (G).

c. Adjust timing belt tension, and check belt clearance to belt guide. Refer to 8.9.9.1. Left End Drive, Tension Adjustment: Timing Belt.

d. Re-install plate (C) in endsheet.

e. Close left endshield.

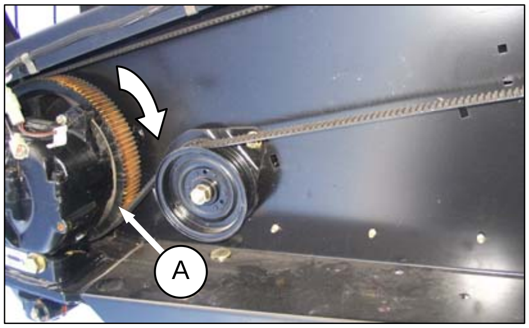
f. Re-adjust tension of a new belt after a short run-in period (about 5 hours).

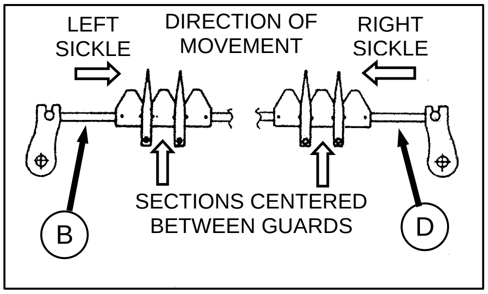
8.9.9.3 Sickle Drive Timing

Double Knife Harvest Headers 35 ft. and smaller require that sickles are properly timed to move in opposite directions.

To adjust sickle timing, proceed as follows:

a. Remove right sickle drive belt. Refer to Removal: Right End Timing Belt on previous page.

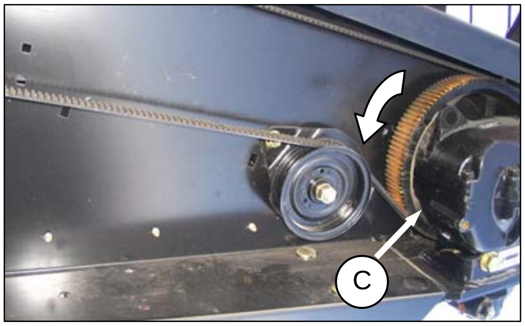


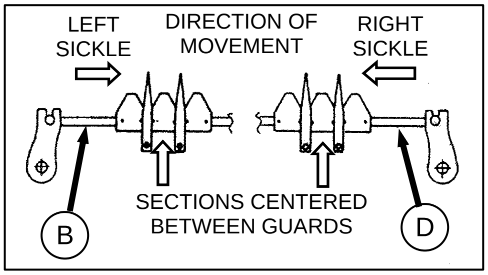


b. Rotate left sickle drive box driven pulley (A) clockwise until left sickle (B) is at the center of the inboard stoke (moving towards center of header).

NOTE

Center stroke is when sickle sections are centered between guard points as shown.





c. Rotate right sickle drive box pulley (C) counterclockwise until right sickle (D) is at the center of the inboard stroke.

d. Install right sickle drive box drive belt, and adjust tension. Refer to Installation: Right End Timing Belt on previous page.

IMPORTANT

To maintain timing, sickle drive box driver and driven pulleys must NOT rotate as the belt is tightened.

e. Check that timing belts are properly seated in grooves on both driver and driven pulleys.

f. Check for correct sickle timing by rotating the drive slowly by hand, and observe sickles where they overlap at center of the header.

IMPORTANT

Sickles must move in opposite directions, and must begin moving at exactly the same time.

If timing is off, proceed as follows:

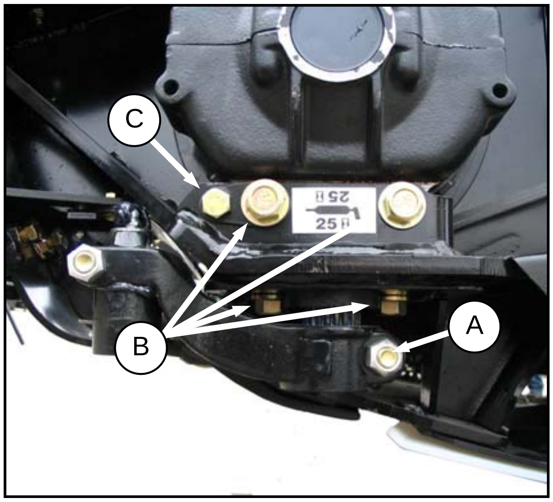
1. Loosen right belt sufficiently to allow skipping the belt one or more teeth as required. Refer to Refer to 8.9.9.1. Left End Drive, Tension Adjustment: Timing Belt.
2. If right sickle leads left sickle, rotate RIGHT SIDE driven pulley (C) clockwise.
3. If right sickle lags left sickle, rotate RIGHT SIDE driven pulley (C) counterclockwise.
4. Tighten right belt.

8.9.10 Sickle Drive Box

CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

8.9.10.1 Mounting Bolts



Check four sickle drive box mounting bolts (B) torque after the first 10 hours operation, and every 100 hours thereafter. Torque should be 200 ft·lbf (270 N·m).

8.9.10.2 Sickle Drive Box Removal

a. Loosen sickle drive belt, and slip it off sickle drive box pulley. Refer to Section 8.9.8 Sickle Drive Belts: Non-Timed Drive.

b. Remove sickle head pin. Refer to Section 8.9.2 Sickle Removal, steps a. and b.

c. Remove bolt (A) from pitman arm.

d. Remove pitman arm from sickle drive box shaft.

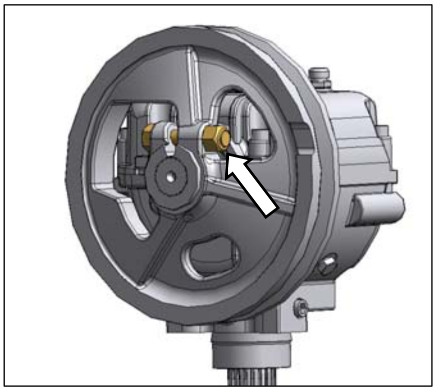
e. Remove bolts (B) attaching sickle drive box to frame.

IMPORTANT

Do NOT remove or loosen locating tab (C). This is a factory adjustment.

f. Remove sickle drive box.

8.9.10.3 Pulley Removal

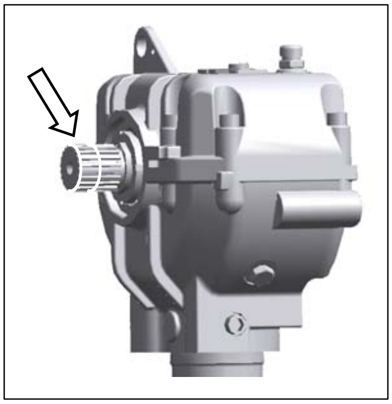


a. Loosen nut and bolt from pulley.

b. Remove pulley using a 3-jaw puller.

8.9.10.4 Pulley Installation

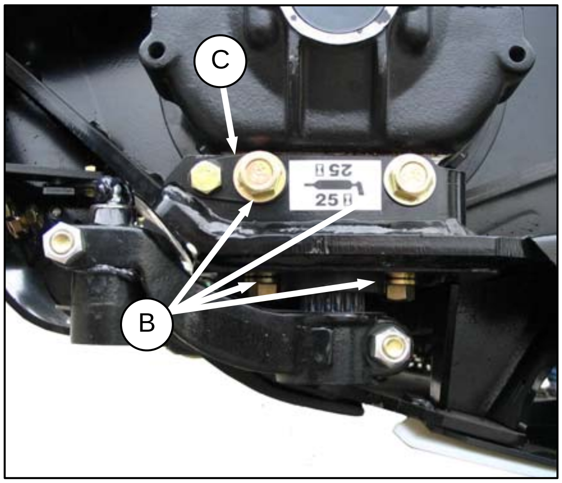
a. Remove any rust or paint from shaft and pulley splines. For replacement parts, remove oil/grease with degreasing agent.



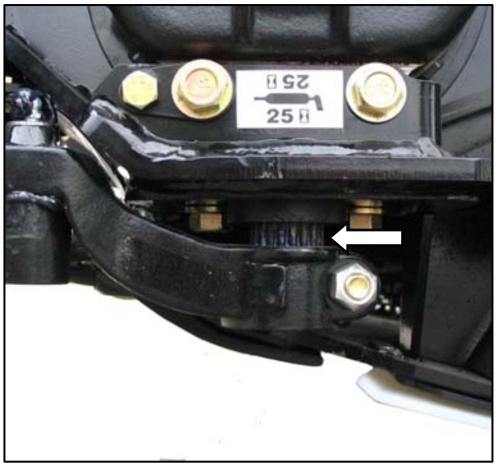
b. Apply Loctite® #243 adhesive (or equivalent) to spline. Apply in two bands around shaft as shown, with one band at end of spline, and one band approximately mid-way.

c. Install pulley on shaft until flush with end of shaft, and secure with bolt and nut. Torque bolt to 160 ft·lbf (217 N·m).

8.9.10.5 Sickle Drive Box Installation

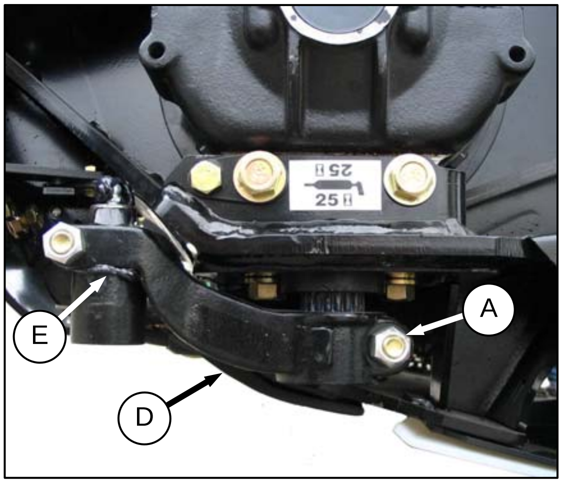


a. Position sickle drive box with locating tab (C) at original position, and install four bolts (B). Torque side bolts, and then bottom bolts to 200 ft·lbf (270 N·m).



b. Apply Loctite® #243 adhesive (or equivalent) to spline. Apply in two bands around shaft as shown, with one band at end of spline, and one band approximately mid-way.

c. Remove any rust or paint from pitman arm splines. For replacement parts, remove oil/grease with degreasing agent.



d. Slide pitman arm (D) onto output shaft.

e. Slide arm up or down on shaft until it just contacts knifehead (0.010 in. [0.25 mm] gap) (E).

f. Rotate pulley to ensure drive arm just clears frame to ensure proper placement on splines. Position pitman arm at furthest outboard position.

g. Install bolt (A) and nut, and torque to 160 ft·lbf (217 N·m).

h. Install sickle head pin. Refer to Section 8.9.4 Sickle Installation.

i. Install drive belt onto sickle drive box pulley, and tighten. Refer to Section 8.9.8 Sickle Drive Belts: Non-Timed Drive.

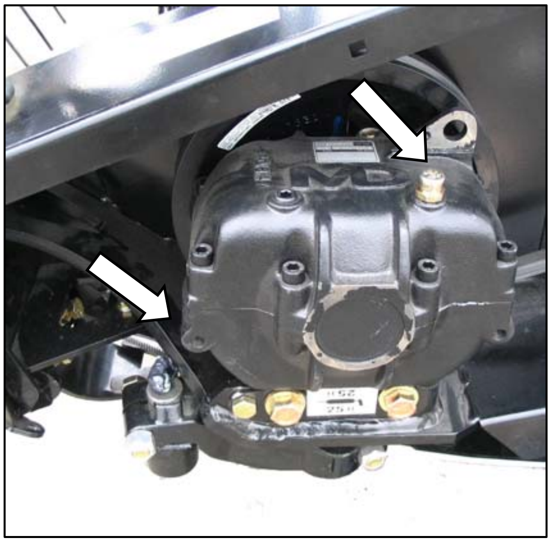
8.9.10.6 Changing Oil

NOTE

Change sickle drive box lubricant after the first 50 hours of operation and every 1000 hours (or 3 years) thereafter.

a. Raise header to allow a suitable container to be placed under sickle drive box drain to collect oil.

b. Open endshield(s).



c. Remove breather/dipstick, and drain plug.

d. Re-install drain plug, and add 2.3 U.S. quarts (2.2 liters) SAE 85W-140 oil to required level.

e. Close endshield(s).

8.10 ADAPTER FEED DRAPER

CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

8.10.1 Draper Tension Adjustment

Draper tension should be just enough to prevent slipping, and keep draper from sagging below cutterbar. Set draper tension as follows:

DANGER

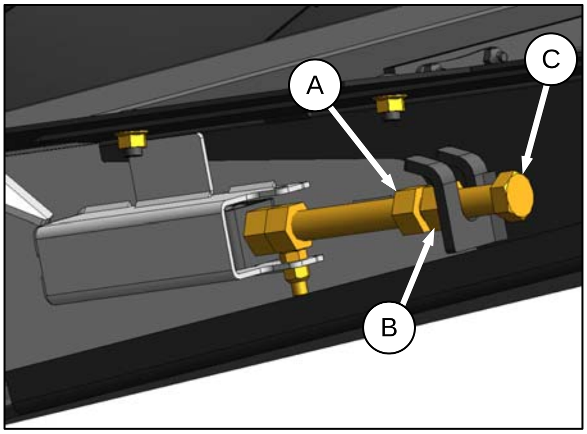
To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

CAUTION

Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.

a. Raise header fully, stop engine, and remove key. Engage header lift cylinder stops.

b. Check that draper guide (rubber track on underside of draper) is properly engaged in groove of drive roller, and that idler roller is between the guides.

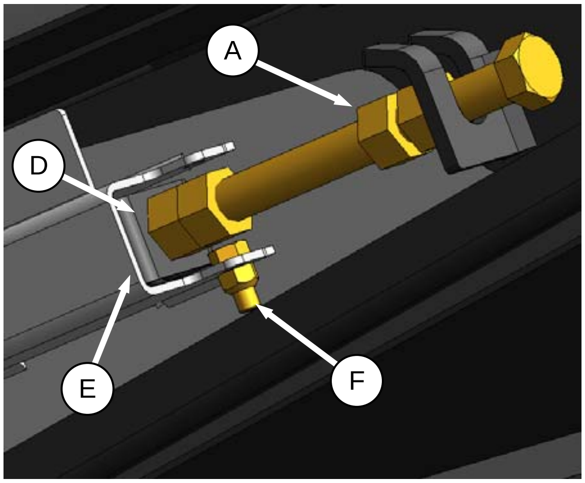


c. Loosen jam nut (A).

d. Hold nut (B) with a wrench, and turn bolt (C) clockwise to increase tension.

IMPORTANT

Adjust both sides equal amounts.



e. Correct tension is when retainer (D) is flush with bracket (E), and bolt (F) is free.

f. Tighten jam nut (A).

8.10.2 Replacing Draper

The draper should be replaced or repaired if it is torn, missing slats, or cracked.

a. If adapter is attached to combine and header, disconnect header. See Section 7.3 HEADER ATTACHMENT/DETACHMENT.

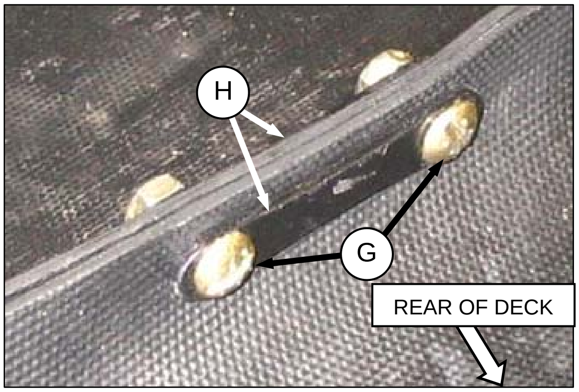
b. Raise header fully, stop engine, and remove key. Engage header lift cylinder stops.

c. Loosen draper as follows:
   1. Loosen jam nut (A).
   2. Hold nut (B) with a wrench, and turn bolt (C) counterclockwise to release tension.

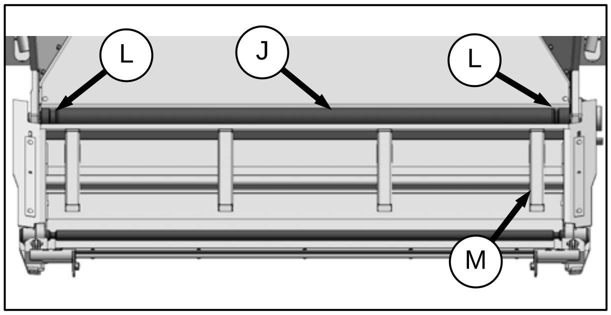
d. Repeat on opposite side of adapter.

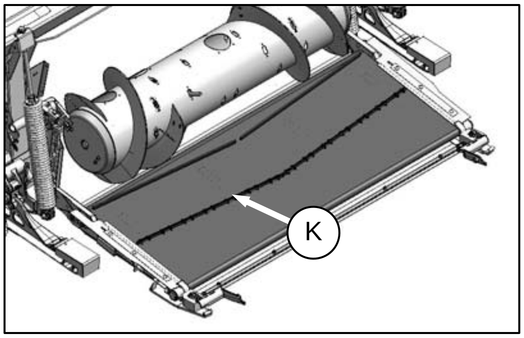
e. Disengage header lift cylinder stops, and lower feeder house and adapter onto blocks to keep adapter slightly off the ground.

(continued next page)



f. Remove nuts, screws (G), and straps (H) along draper joint.
g. Pull draper from deck.





h. Install new draper over drive roller (J) with chevron cleat (K) pointing to front of adapter, and ensuring draper guides fit in drive roller grooves (L).
i. Pull draper along bottom of adapter deck and over draper supports (M).
j. Connect draper with straps (H), screws (G) and nuts with screw heads facing rear of deck. Tighten nuts so that end of screw is approximately flush with nut.
k. Adjust draper tension. Refer to Section 8.11.1 Header Draper Tension Adjustment.

8.11 HEADER DRAPERS

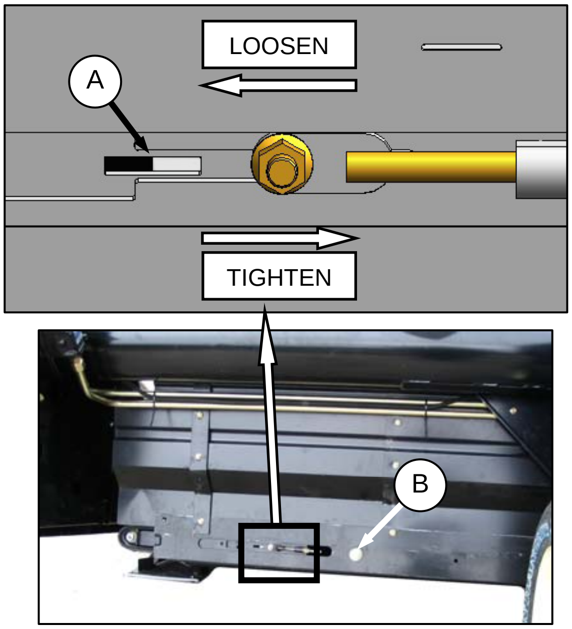
CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

8.11.1 Header Draper Tension Adjustment

Draper tension should be just enough to prevent slipping, and keep draper from sagging below cutterbar. Set draper tension as follows:

a. Check that draper guide (rubber track on underside of draper) is properly engaged in groove of drive roller, and that idler roller is between the guides.



LH IDLER ROLLER ADJUST - RH OPPOSITE

b. Turn bolt (A) clockwise (tighten), and the white indicator bar (B) will move inboard in direction of arrow (indicating that draper is tightening). Tighten until bar is about halfway in window.

IMPORTANT

To avoid premature failure of draper, draper rollers and/or tightener components, do NOT operate with tension set so that white bar is not visible.

Also to prevent draper from scooping dirt, ensure draper is tight enough that it does not sag below point where cutterbar contacts the ground.

8.11.2 Replacing Split Draper

The draper should be replaced or repaired if it is torn, missing slats, or cracked.

CAUTION

To avoid bodily injury from fall of raised reel, always engage reel props before going under raised reel for any reason.

DANGER

To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key, and engage lift cylinder locks before going under machine for any reason.

8.11.2.1 Draper Removal

a. Raise reel, and engage reel props.

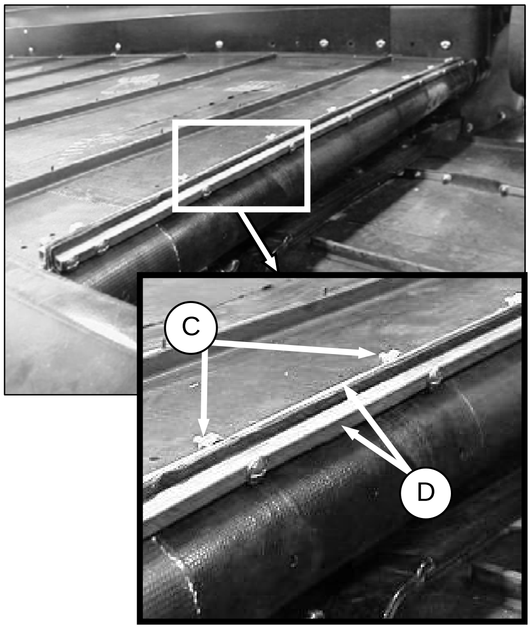
b. Raise header, and install lift cylinder locks.

c. Stand in draper opening or on combine feed draper, and move draper until draper joint is in work area.

NOTE

Deck can also be shifted towards center to provide opening at endsheet.

d. Release tension on the draper. Refer to previous section.



e. Remove nuts (C) and tube connectors (D) at draper joint.

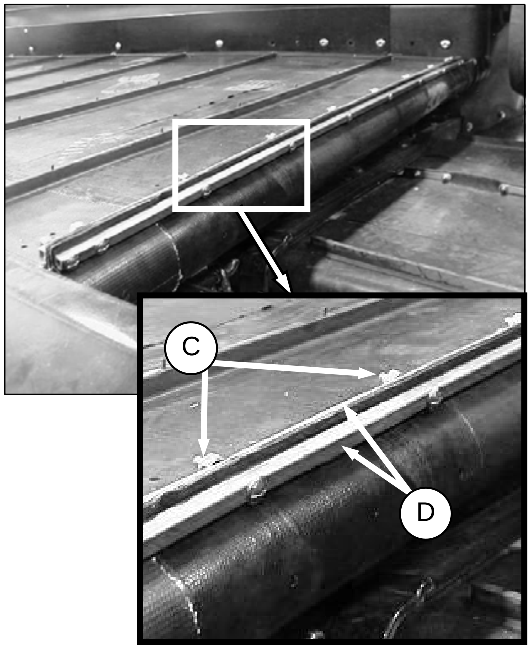
f. Pull draper from deck.

8.11.2.2 Draper Installation

a. Insert draper into deck at outboard end, under the rollers. Pull draper into deck while feeding it at the end.

b. Feed in the draper until it can be wrapped around the drive roller.

c. Similarly insert the other end into the deck over the rollers. Pull draper fully into the deck.



d. Attach ends of draper with tube connectors (D).

e. Install screws (C) with heads facing the center opening.

f. Adjust tension. Refer to Section 8.11.1 Header Draper Tension Adjustment.

8.11.3 Header Draper Alignment

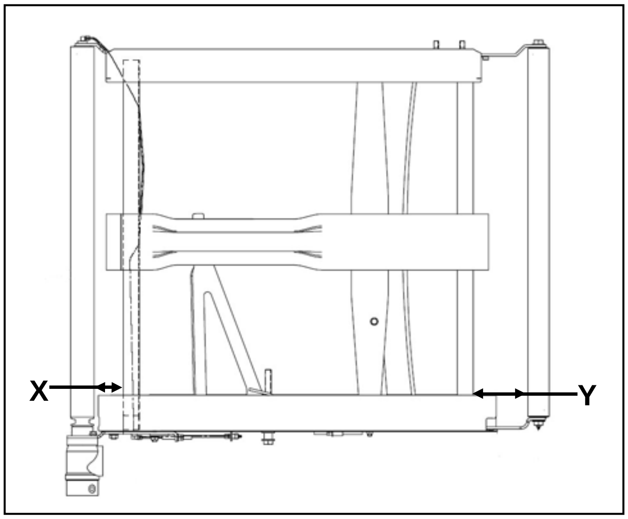
Each draper deck has one fixed roller and one spring-loaded roller. The spring-loaded roller is located at the same end of the deck as the draper tensioner.

Both rollers can be aligned by adjuster rods so that the draper tracks properly on the rollers.

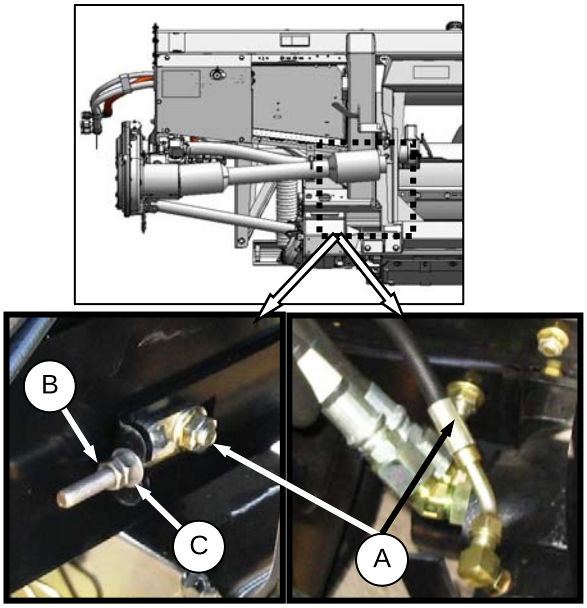
CAUTION

To avoid personal injury, before servicing machine or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

If the draper is tracking incorrectly, make the following adjustments to the rollers:

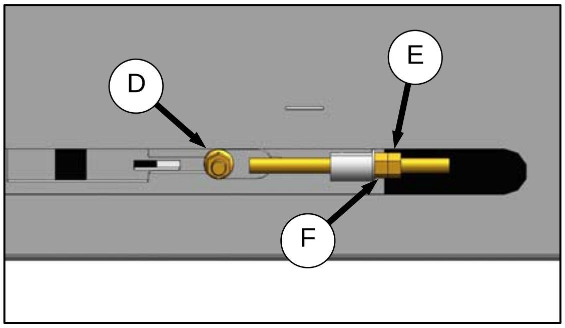


TRACKING	AT LOCATION	ADJUSTMENT	METHOD
Backward	Drive Roller	INCREASE **'X'**	Tighten Nut 'C'
Forward		DECREASE **'X'**	Loosen Nut 'C'
Backward	Idler Roller	INCREASE **'Y'**	Tighten Nut 'F'
Forward		DECREASE **'Y'**	Loosen Nut 'F'



LH DRIVE ROLLER ADJUST - RH OPPOSITE

a. Adjust the drive roller **'X'** by loosening nuts (A), jam nut (B) on adjuster rod, and turning the adjusting nut (C).



LH IDLER ROLLER ADJUST
- RH OPPOSITE

b. Adjust the idler roller **'Y'** by loosening nut (D), jam nut (E) on adjuster rod, and turning adjusting nut (F).

c. If the draper will not track at the idler roller end, the drive roller is likely not square to the deck. Adjust the drive roller, and then re-adjust the idler.

8.11.4 Draper Roller Maintenance

The draper rollers have non-greaseable bearings.

The external seal should be checked every 200 hours (and more frequently in sandy conditions) to obtain the maximum bearing life.

DANGER

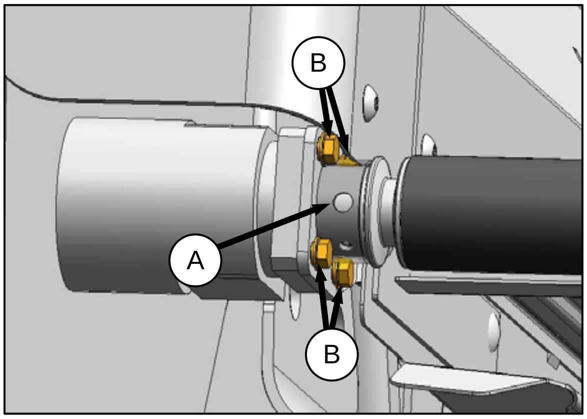
Engage header lift cylinder stops and reel props before working under header or reel.

8.11.4.1 Drive Roller Removal

a. Raise header and reel and engage cylinder and reel stops.

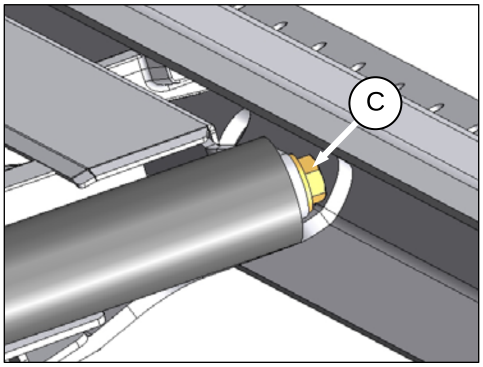
b. On deck shift headers, position deck so drive roller is easily accessible.

c. Loosen and uncouple draper. Refer to Section 8.11.2 Replacing Split Draper.



d. Loosen the two set screws in access hole (A) in the drive roller hub at motor end.

e. Remove the four bolts (B) that hold hydraulic motor to arm, and pull motor off roller.



f. Remove bolt (C) at forward end of roller, and remove roller from deck.

8.11.4.2 Drive Roller Installation

DANGER

Engage header lift cylinder stops and reel props before working under header or reel.

Refer to illustrations opposite.

a. Position roller in deck arms, and secure forward end with bolt (C) and washer. Do not tighten at this time.

b. Apply SAE Multi-Purpose grease to motor shaft, locate motor on roller arm, and engage motor shaft into roller.

c. Secure motor with shoulder bolts (B), and tighten. The shoulder bolts allow clearance between the motor and arm. The motor is **NOT** secured tightly to arm.

d. Push roller against shoulder on motor shaft, and hand-tighten the two set screws (A). Torque set screws to 20 ft·lbf (27 N·m).

e. Torque bolt (C) to 70 ft·lbf (95 N·m).

f. Re-attach draper. Refer to Section 8.11.2 Replacing Split Draper.

g. Adjust draper tension. Refer to Section 8.11.1 Header Draper Tension Adjustment.

h. Re-adjust hydraulic motor hoses (if required), and tighten hose clamps.

i. Run machine, and adjust tracking if required. Section 8.11.3 Header Draper Alignment.

8.11.4.3 Idler Roller Removal

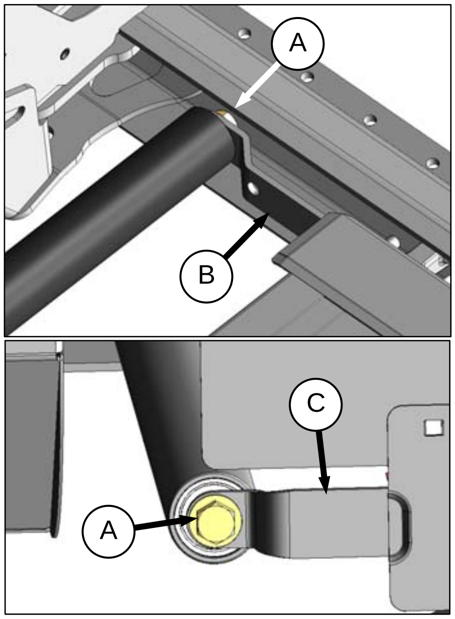
DANGER

Engage header lift cylinder stops and reel props before working under header or reel.

a. Raise header and reel, and engage cylinder and reel stops.

b. On deck shift headers, position deck so idler roller is easily accessible.

c. Loosen and uncouple draper. Refer to Section 8.11.2.1 Draper Removal.



d. Remove bolts (A) and washer at ends of idler roller.

e. Spread roller arms (B) and (C), and remove roller.

8.11.4.4 Idler Roller Installation

See illustration opposite.

a. Position stub shaft in idler roller in forward arm (B) on deck.

b. Push on roller to deflect forward arm slightly so that stub shaft at rear of roller can be slipped into rear arm (C).

c. Install bolts (A) with washers, and torque to 70 ft·lbf (93 N·m).

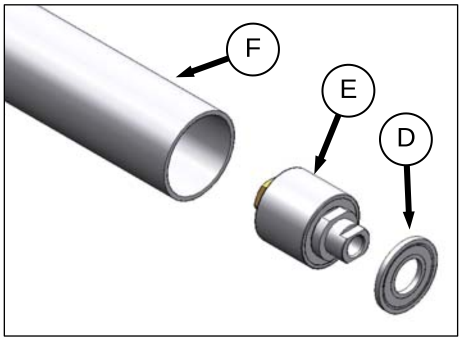
d. Re-attach draper. Refer to Section 8.11.2 Replacing Split Draper.

e. Adjust draper tension. Refer to Section 8.11.1 Header Draper Tension Adjustment.

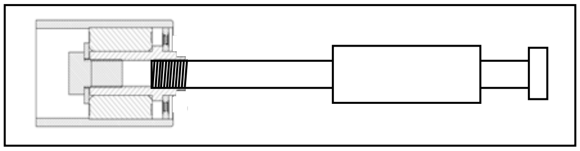
f. Run machine, and adjust tracking if required. Refer to Section 8.11.3 Header Draper Alignment.

8.11.4.5 Draper Roller Bearing/Seal Replacement

a. Remove roller assembly. Refer to Section 8.11.4.1 Drive Roller Removal or Section 8.11.4.3 Idler Roller Removal.



b. Remove bearing assembly (E) and seal (D) from roller tube (F) as follows:



1. Attach a slide hammer to threaded shaft.
2. Tap out the bearing assembly.

c. Clean inside of roller tube (F). Check tube for wear or damage. Replace if necessary.

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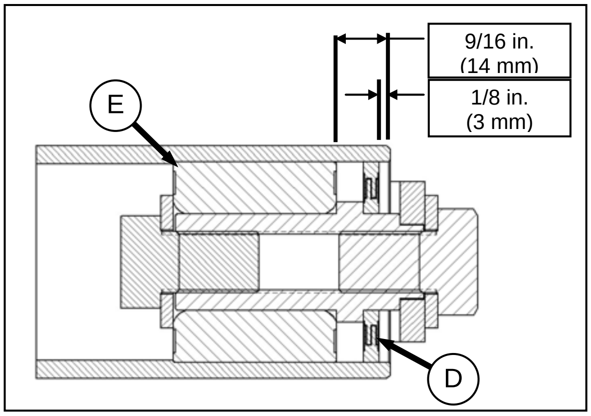
d. Install bearing and seal as follows:



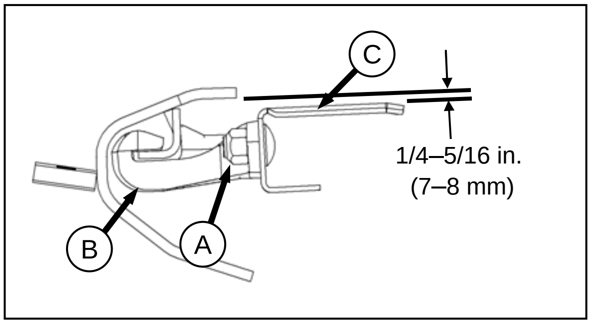
1. Install bearing assembly (E) into roller by pushing on outer race of bearing. The bearing is fully positioned when the 9/16 inch (14 mm) dimension is achieved.
2. Apply grease in front of bearing. Refer to Section 8.3.4 Recommended Fluids and Lubricants.

e. Install seal (D) as follows:

1. Locate seal at roller opening, and position a flat washer (1 in. I.D. X 2 in. O.D.) on seal.
2. Using a suitable socket to locate on the washer, tap seal into roller opening until it seats on the bearing assembly. The seal is fully positioned when the 1/8 in. (3 mm) dimension is achieved. See illustration above.

f. Re-install roller assembly. Refer to Section 8.11.4 Draper Roller Maintenance.

8.11.5 Deck Height



To prevent material from entering drapers and cutterbar, maintain deck height so that draper runs just below cutterbar with maximum 1/32 in. (1 mm) gap, or with draper deflected down slightly (up to 1/16 in. [1.5 mm] to create a seal.

The illustration shows the adjustment without the draper.

NOTE

Measurement is at supports with header in working position, and decks slid fully ahead.

Adjust as follows:

DANGER

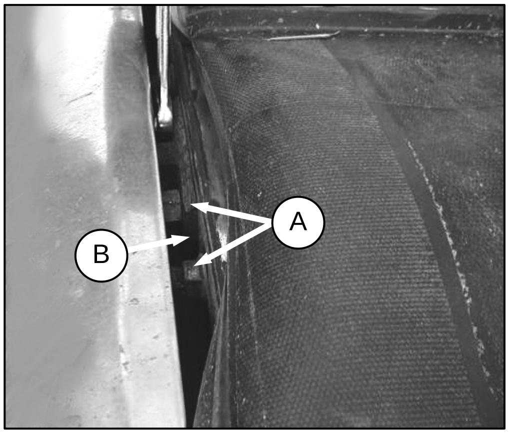
Engage header lift cylinder stops and reel props before working under header or reel.

DANGER

To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key, and engage lift cylinder locks before going under machine for any reason.

a. Loosen tension on draper. Refer to Section 8.11.1 Header Draper Tension Adjustment.

b. Lift draper up at front edge past cutterbar.



c. Loosen two lock-nuts (A) (four if it is an endless draper) **one-half turn only** on deck support (B). There are two to four supports per deck, depending on header size.

d. Tap deck (C) to lower deck relative to supports to achieve setting recommended above. Tap support (B) using a punch to raise deck relative to support.

e. Tighten deck support hardware (A).

f. Tension draper. Refer to Section 8.11.1 Header Draper Tension Adjustment.

8.12 REEL AND REEL DRIVE

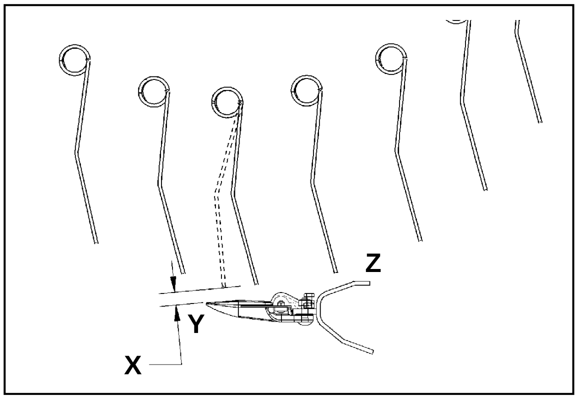
CAUTION

To avoid personal injury, before servicing header or opening drive covers, follow procedures in Section 8.1 PREPARATION FOR SERVICING.

8.12.1 Reel Clearance to Cutterbar

The finger to guard/cutterbar clearances with reel fully lowered varies with header width, and are as follows. See illustration opposite.

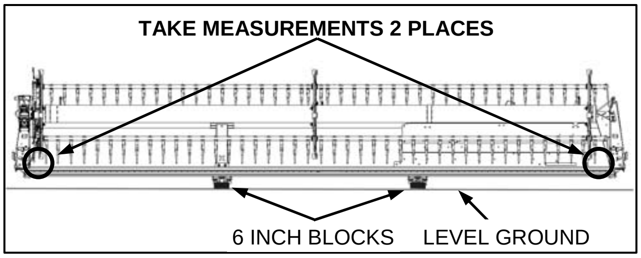
HEADER (FT)	‘X’ +/- .12 in. (3 mm) @ REEL ENDS	
	SINGLE REEL	DOUBLE REEL
20 FT	3/4 in. (20mm)	---
25 FT	1 in. (25 mm)	
30 FT	1-3/4 in. (45 mm)	3/4 in. (20 mm)
35 FT	2-3/8 in. (60 mm)	
40 FT	---	
45 FT		



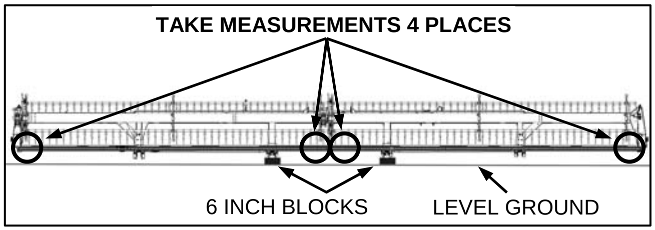
8.12.1.1 Clearance Measurement

CAUTION

Engage header lift cylinder stops before working under header.



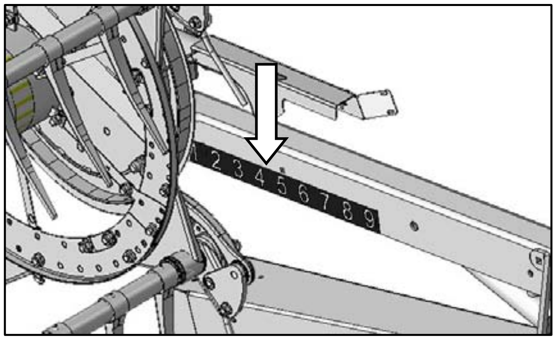
SINGLE REEL



DOUBLE REEL

a. Raise header, and place a 6 in. (150 mm) block under each inboard header leg.

b. Lower header onto blocks. Fully lower the reel.



c. Adjust fore-aft reel position so that back end of cam disc is approximately between 4 and 5 on the arm decal.

d. Shut down combine. Remove key from ignition.

e. Measure clearance at ends of each reel.

NOTE

The reel has been adjusted at the factory to provide more clearance at the center of the reel than at the ends (‘frown’) to compensate for reel flexing.

f. Check all possible points of contact between points **‘Y’** and **‘Z’**. Depending on reel fore-aft position, minimum clearance can occur at guard tine, hold-down, or cutterbar.

(continued next page)

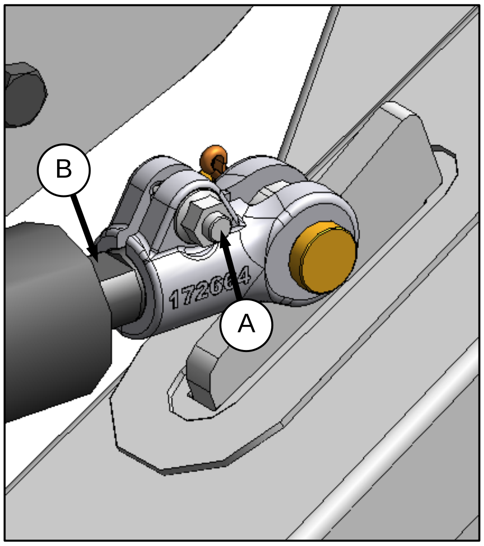
g. Refer to following section for adjustment procedure.

8.12.1.2 Reel Clearance Adjustment

DANGER

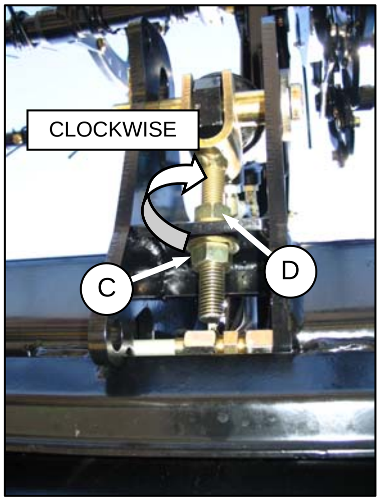
Engage header lift cylinder stops before working under header.

a. Adjust outside arms to change clearance at ends of cutterbar as follows:



1. Loosen bolt (A).
2. Turn cylinder rod (B) counterclockwise to raise reel and increase clearance to cutterbar, or clockwise to decrease.
3. Tighten bolt (A).
4. Repeat at opposite side.

b. **Double Reel Only:** Adjust center arm to change clearance at center of cutterbar as follows:



LOOKING UP AT ARM UNDERSIDE

1. Loosen nut (C).
2. Turn nut (D) counterclockwise to raise reel and increase clearance to cutterbar, or clockwise to decrease.
3. Tighten nut (C).

8.12.2 Reel Frown Adjustment

The reel has been adjusted at the factory to provide more clearance at the center of the reel than at the ends (frown) to compensate for reel flexing.

The frown is adjusted by re-positioning the hardware connecting reel finger tube arms to reel discs. The frown adjustment compensates for reel flexing.

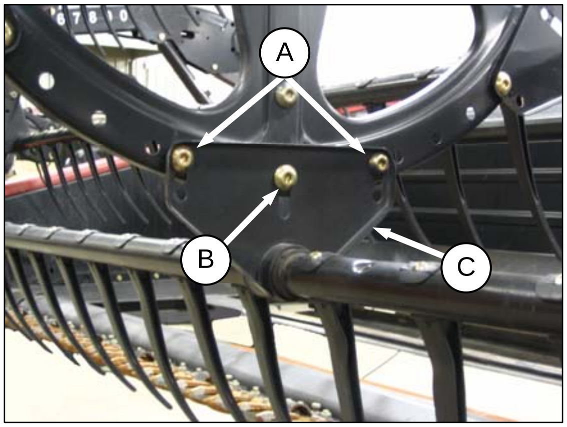
IMPORTANT

The frown profile should be measured prior to reel disassembly for servicing so that the profile can be maintained after re-assembly.

a. Position the reel over the cutterbar (4–5 on gauge). This position provides adequate clearance at all reel fore-aft positions. Refer to Section 7.9.9 Reel Fore-Aft Position.

b. Take a measurement at each reel disc location for each reel tube.

c. Adjust the profile as follows: Start with the reel disc set closest to center of header, and proceed to the ends.



1. Remove bolts (A).
2. Loosen bolt (B), and adjust arm (C) until desired measurement is obtained between reel tube and cutterbar.

NOTE

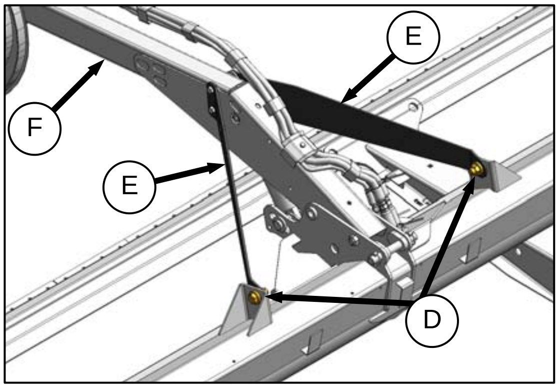
Allow the reel tubes to find a natural curve and position the hardware appropriately.

3. Re-install bolts (A) in aligned holes, and tighten.

8.12.3 Reel Centering

The reel(s) should be centered between the endsheets.

8.12.3.1 Double Reel Header

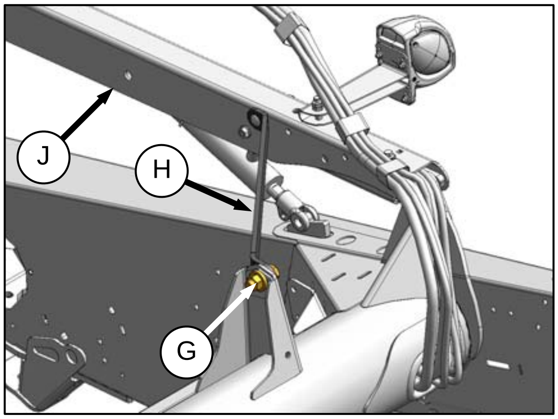


a. Loosen bolt (D) on each brace (E).

b. Move forward end of reel center support arm (F) laterally as required to center both reels.

c. Tighten bolts (D), and torque to 265 ft·lbf (359 N·m).

8.12.3.2 Single Reel Header



a. Loosen bolt (G) on brace (H) at both ends of reel.

b. Move forward end of reel support arm (J) laterally as required to center reel.

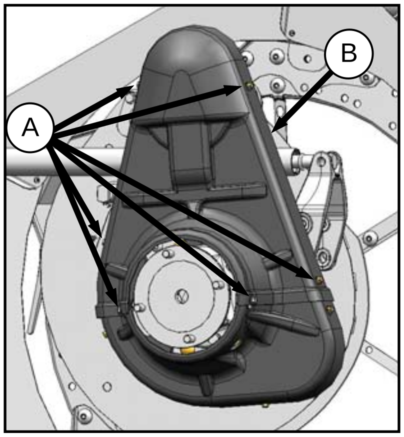
c. Tighten bolts (G), and torque to 265 ft·lbf (359 N·m).

8.12.4 Reel Drive Chain

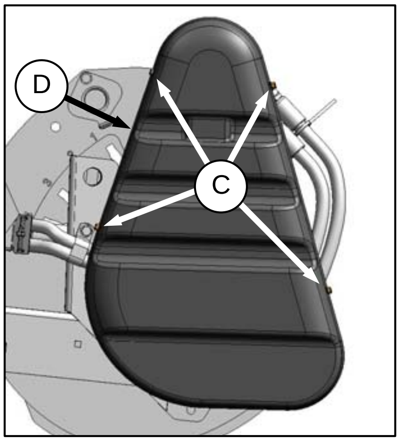
8.12.4.1 Tension Adjustment: High Torque Drive

a. Lower header and reel, shut down combine, and remove key from ignition.

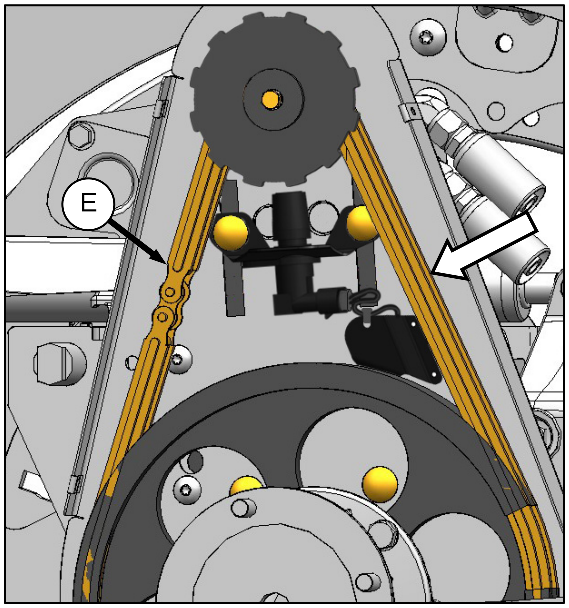
b. Remove reel drive cover:



1. **Double Reel:** Remove six screws (A), and remove upper cover (B).

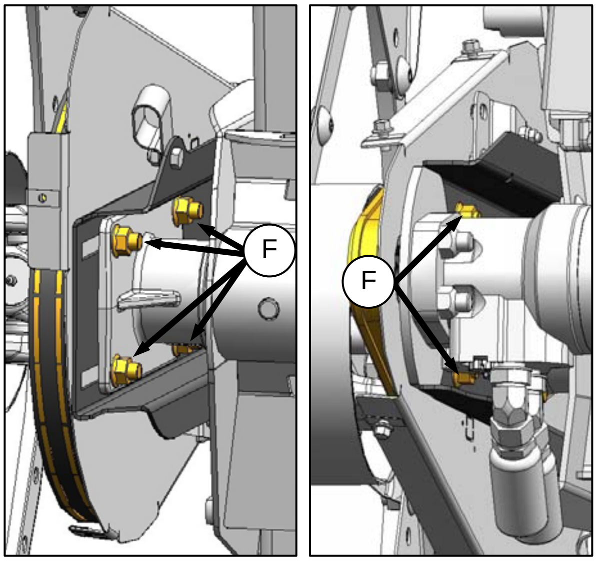


2. **Single Reel High Torque:** Remove four screws (C), and remove cover (D).



DR SHOWN - SR SIMILAR

c. Tension on chain (E) should be such that hand force deflects the chain 1/8 inch (3 mm) at mid-span. Adjust as follows:



1. Loosen six nuts (F) on motor mount.

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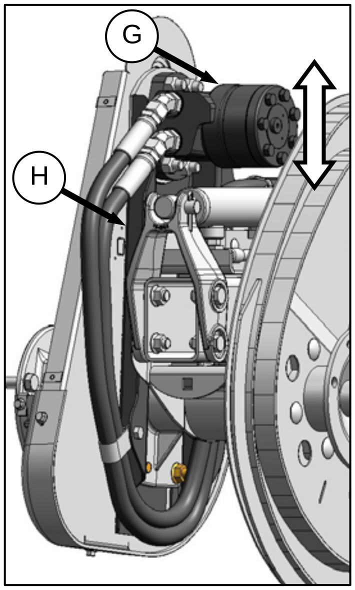
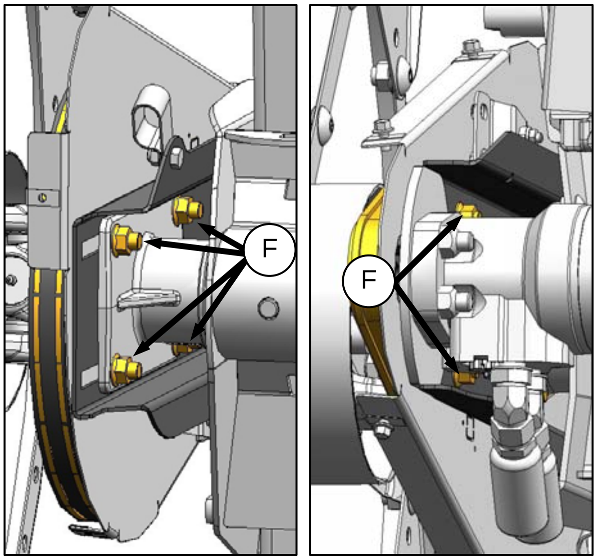


2. Slide motor (G) and motor mount (H) up or down until required tension is achieved.

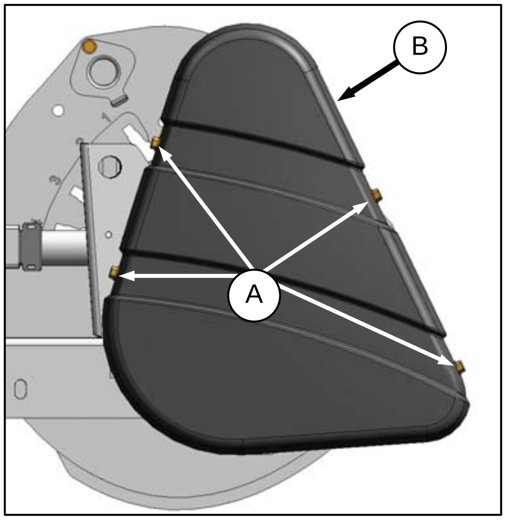


3. Tighten nuts (F) to 75 ft·lbf (102 N·m).

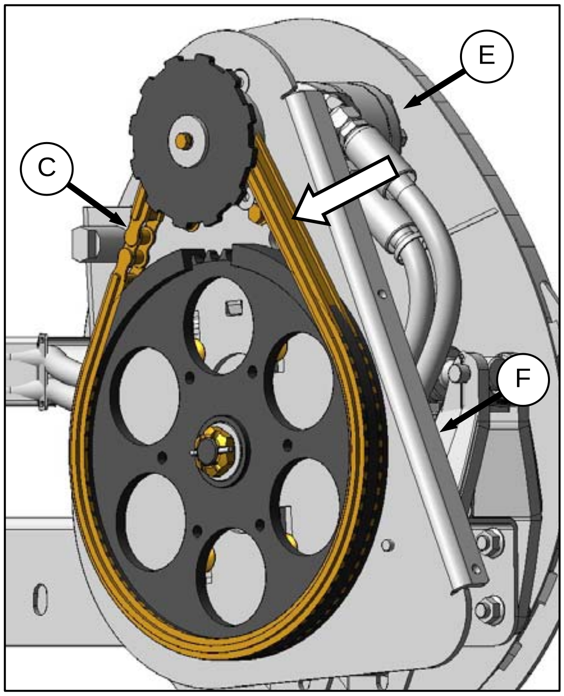
d. Re-install drive cover.

8.12.4.2 Tension Adjustment: Single Reel Standard Torque Drive

a. Lower header and reel, shut down combine, and remove key from ignition.

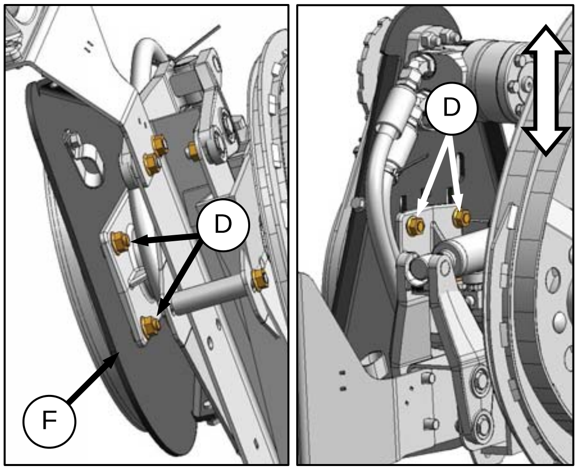


b. Remove four screws (A), and remove reel drive cover (B).



c. Tension on chain (C) should be such that hand force deflects the chain 1/8 inch (3 mm) at mid-span.

d. Adjust tension as follows:

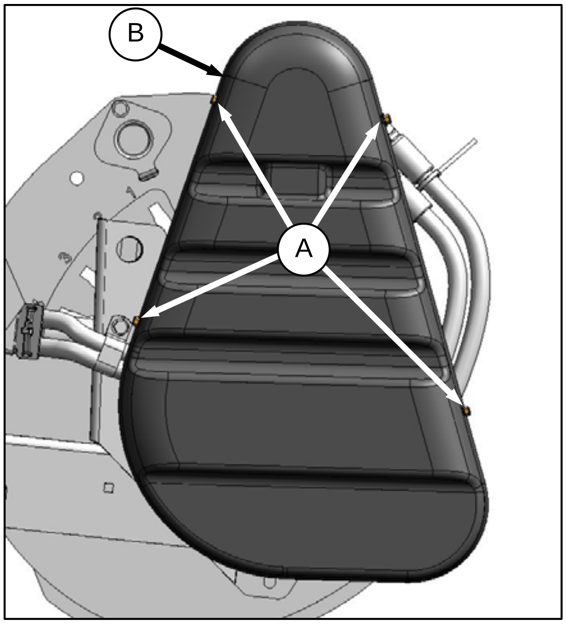


1. Loosen four nuts (D) on motor mount.
2. Slide motor (E) and motor mount (F) up or down until required chain tension is achieved.
3. Tighten nuts (D) to 75 ft·lbf (102 N·m).

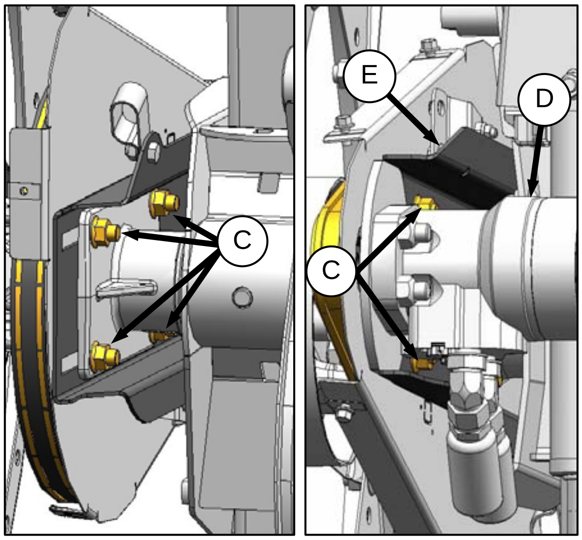
e. Re-install drive cover.

8.12.4.3 Drive Chain Replacement: Single Reel High Torque Drive

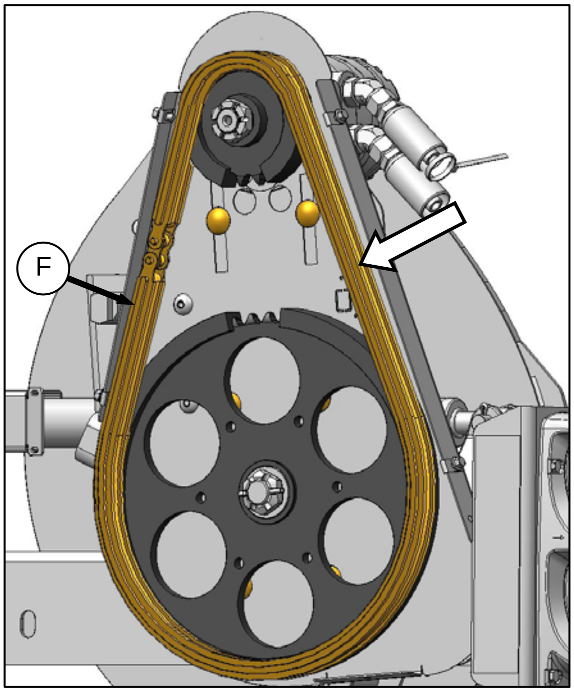
a. Lower header and reel, shut down combine and remove key from ignition.



b. Remove four screws (A), and remove reel drive cover (B).



c. Loosen nuts (C). Slide motor (D) and motor mount (E) down towards reel shaft.



d. Remove chain (F).

e. Position new chain (F) around sprockets.

f. Slide motor (D) and motor mount (E) upward until tension on chain (F) is such that hand force deflects the chain 1/8 inch (3 mm) at mid-span.

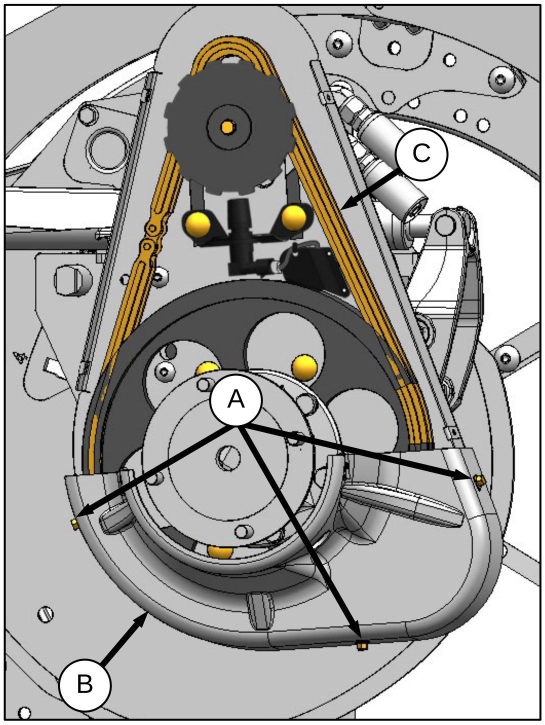
g. Tighten nuts (C), and re-check tension.

b. Re-install drive cover.

8.12.4.4 Drive Chain Replacement: Double Reel

a. Lower header and reel, shut down combine, and remove key from ignition.

b. Remove reel drive upper cover. Refer to previous section.



UNRELATED PARTS HIDDEN FOR CLARITY

c. Remove three screws (A), and remove lower cover (B).

d. Release tension on chain (C). Refer to previous section.

e. The endless chain (C) can be replaced by:

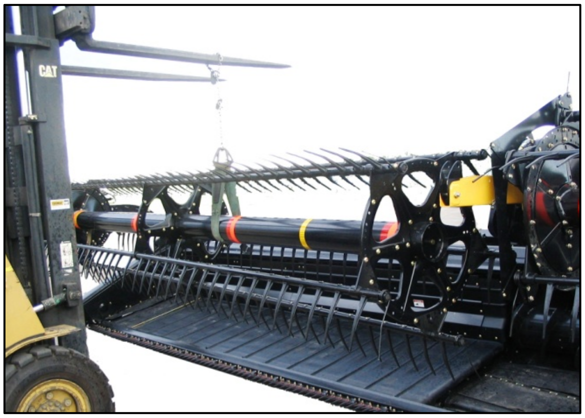
- **Method 1: Disconnecting the Reel Drive**

  OR

- **Method 2: Breaking the Chain.**

Method 1 is preferred because the chain integrity is not affected.

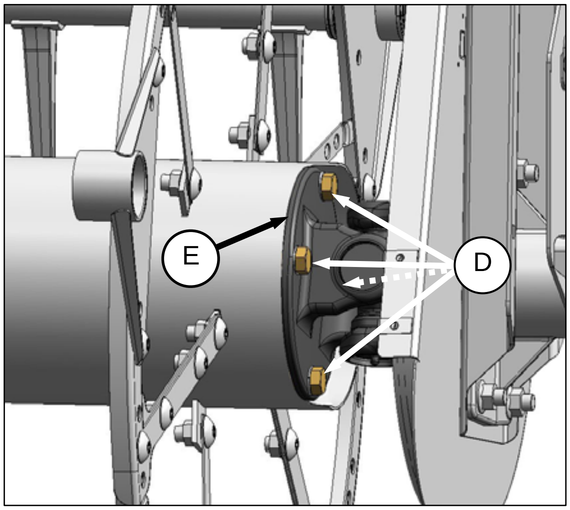
Method 1: Disconnecting the Reel Drive



1. Support inboard end of right reel with a front end loader and nylon slings (or equivalent set-up).

IMPORTANT

To avoid damaging or denting center tube, support reel as close as possible to the end disc.



2. Remove four bolts (D) attaching reel tube to U-joint (E).

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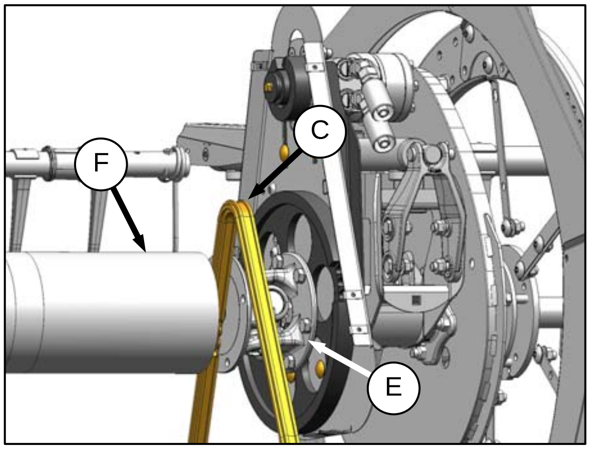
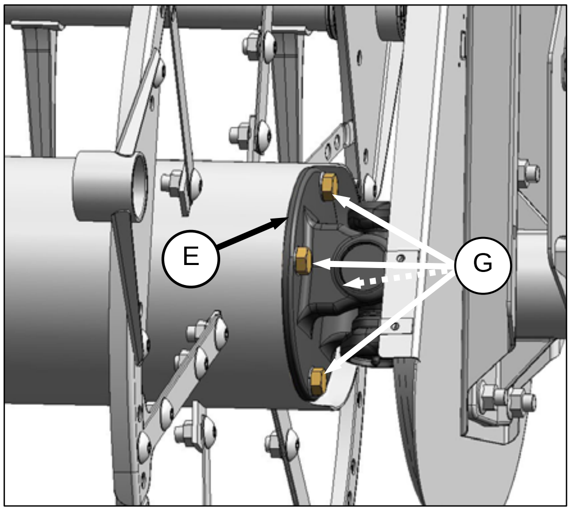
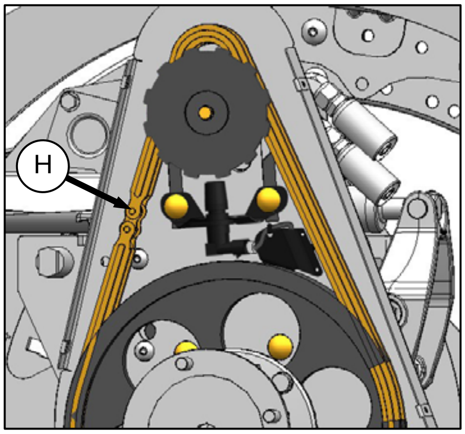


3. Move RH reel sideways to separate the reel tube (F) and U-joint (E).
4. Remove the chain (C).
5. Route new chain (C) over U-joint (E), and locate on sprockets.
6. Adjust the chain tension. Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.
7. Position RH reel tube (F) against reel drive, and engage stub shaft into U-joint (E) pilot hole.
8. Rotate reel until holes in end of reel tube and U-joint line up.

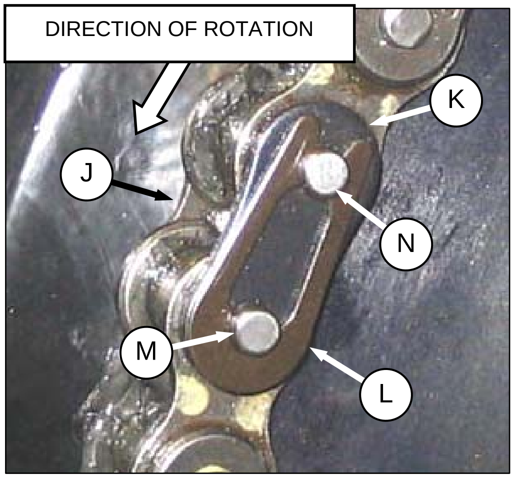


9. Apply Loctite® #243 (or equivalent) to four 1/2 in. bolts (G), and install with lock-washers.
10. Torque to 75–85 ft·lbf (102–115 N·m).
11. Remove temporary reel support.
12. Re-install drive covers.

Method 2: Breaking the Chain



1. Grind off head of a link rivet on chain (H), punch out the rivet, and remove chain.
2. Grind off the head from one of the link rivets on the new chain, and punch out rivet to separate the chain.
3. Locate ends of chain on sprocket.



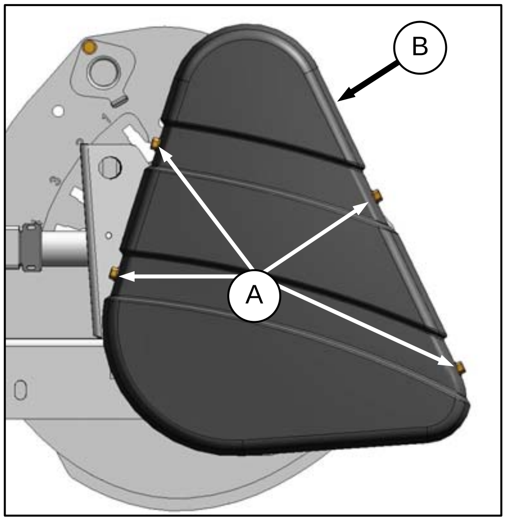
4. Install pin connector (J) (not available as a MacDon part) into chain, preferably from sprocket backside.
5. Install connector (K) onto pins.
6. Install spring clip (L) onto front pin (M) with closed end of clip in direction of sprocket rotation.
7. Locate one leg of clip in groove of aft pin (N).
8. Press other leg of spring clip over face of aft pin (N) until it slips into groove. Do not press clip lengthwise from closed end.
9. Ensure clip is seated in grooves of pins.

f. Adjust the chain tension. Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.

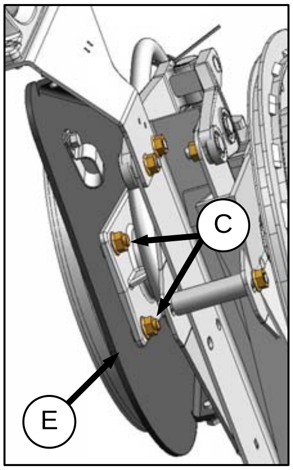
g. Re-install drive covers.

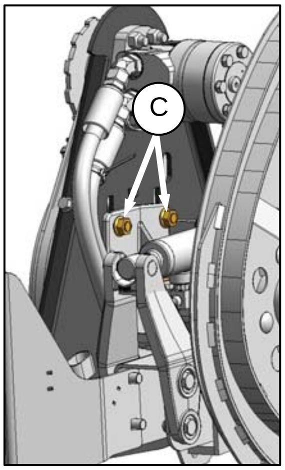
8.12.4.5 Drive Chain Replacement: Single Reel Standard Torque Drive

a. Lower header and reel, shut down combine, and remove key from ignition.

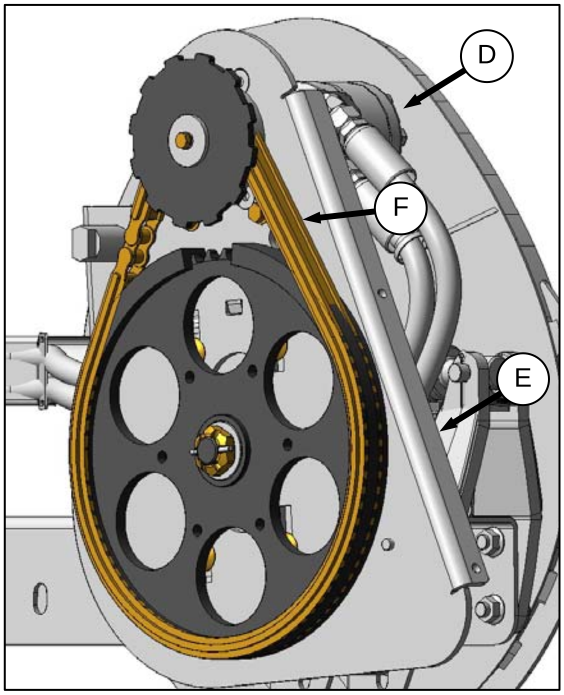


b. Remove four screws (A), and remove reel drive cover (B)





c. Loosen bolts (C). Slide motor (D) and motor mount (E) down towards reel shaft.



d. Remove chain (F).

e. Position new chain (F) around sprockets.

f. Slide motor (D) and motor mount (E) until tension on chain (D) is such that hand force deflects the chain 1/8 inch (3 mm) at mid-span.

g. Tighten nuts (A), and re-check tension.

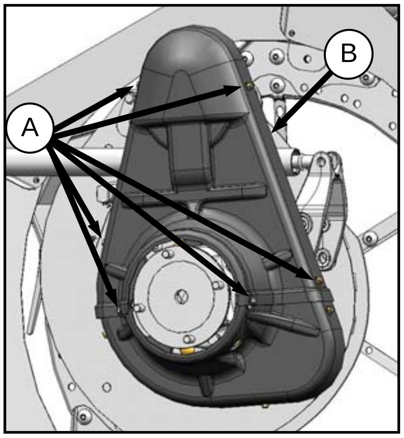
h. Re-install drive cover.

8.12.5 Reel Drive Sprocket

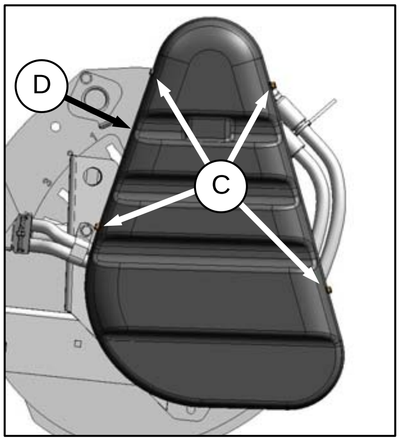
8.12.5.1 Sprocket Replacement: Double Reel Standard Torque and Single Reel High Torque Drive

a. Lower header and reel, shut down combine, and remove key from ignition.

b. Remove reel drive cover(s):



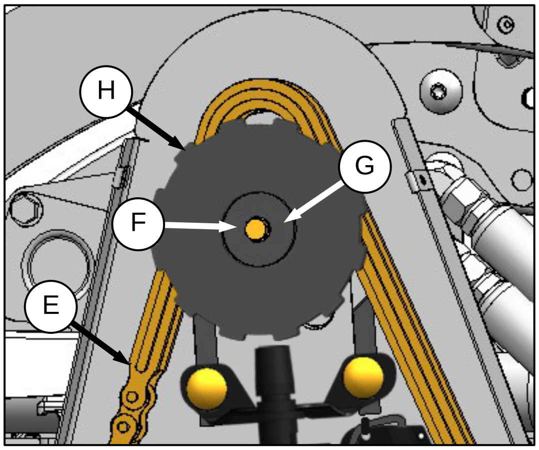
1. **Double Reel:** Remove six screws (A), and remove upper cover (B).



2. **Single Reel High Torque**: Remove four screws (C), and remove cover (D).

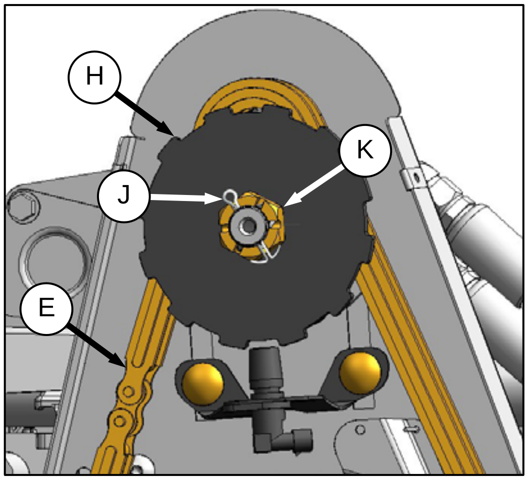
c. Release tension on chain (E). Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.

d. If **STANDARD TORQUE** drive:



1. Remove bolt (F), lock washer, and flat washer (G).
2. Remove speed sensor disc (H) (if installed).

e. If **HIGH TORQUE** drive:



1. Remove cotter pin (J) and slotted nut (K).
2. Remove speed sensor disc (H) (if installed).

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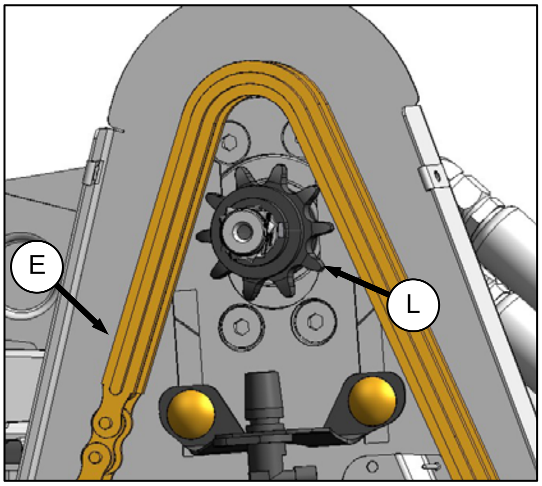
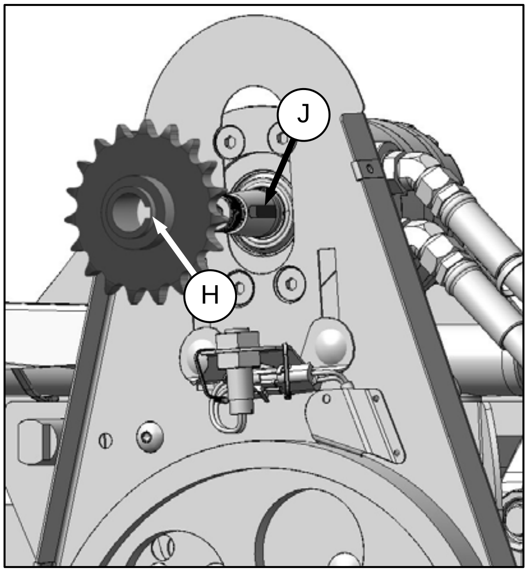


f. Slip chain (E) off drive sprocket (L).

g. Remove sprocket (L) from shaft.

IMPORTANT

Do NOT use pry bar and/or hammer to remove sprocket. This will damage the motor. Use a puller if sprocket does not come off by hand.

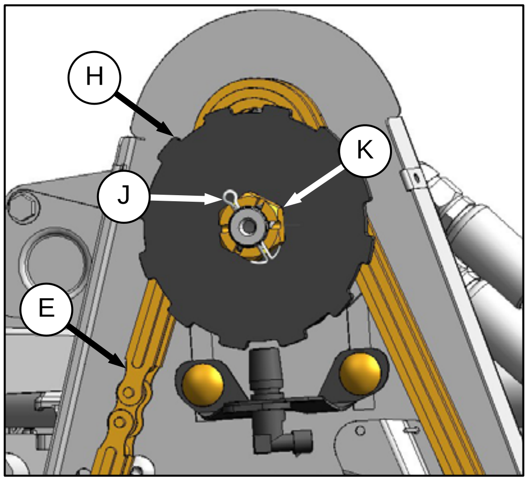


h. Align keyway (H) in new sprocket with key (J) in shaft, and slide new sprocket onto shaft.

i. Slip chain over drive sprocket.

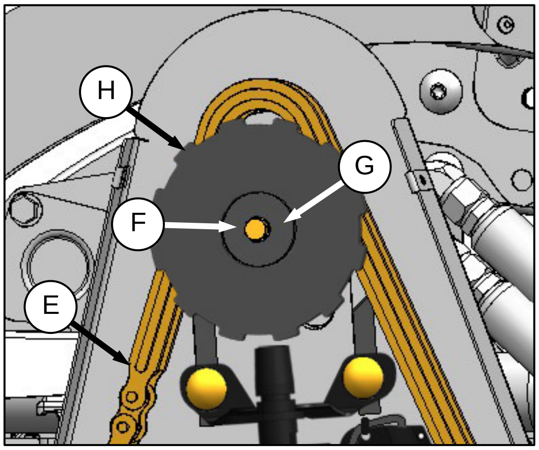
j. Install speed sensor disc (H) (if applicable) onto shaft.

k. If **HIGH TORQUE** drive:



1. Install slotted nut (K), and torque to 10–20 in·lbf (1.1–2.2 N·m).
2. Install cotter pin (J). Tighten nut to next slot if required.

l. If **STANDARD TORQUE** drive:



1. Install flat washer (G), lock washer, and bolt (F).
2. Torque bolt to 18 lbf·ft (24 N·m).

m. Tighten chain (E). Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.

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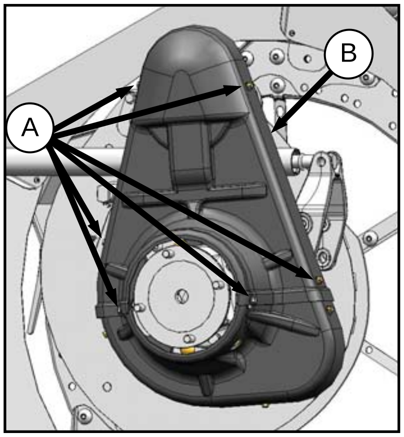
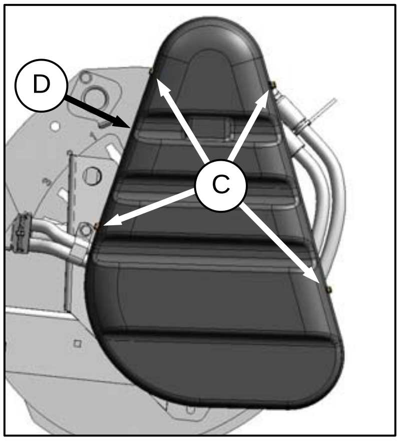
n. Re-install drive cover(s):



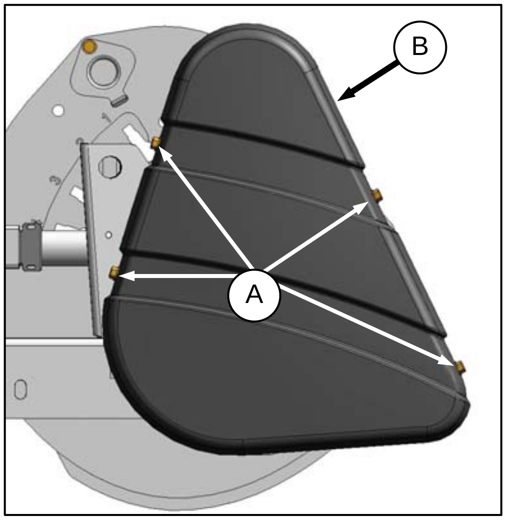
1. **Double Reel:** Position upper cover (B) onto drive, and secure with six screws (A).



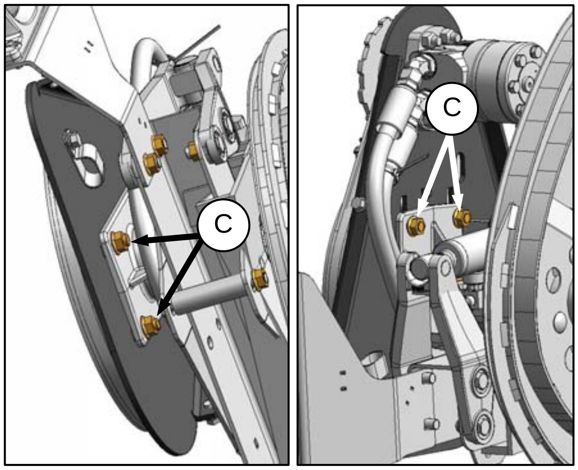
2. **Single Reel High Torque:** Position cover (D) onto drive, and secure with four screws (C).

8.12.5.2 Sprocket Replacement: Single Reel Standard Torque Drive

a. Lower header and reel, shut down combine, and remove key from ignition.



b. Remove four screws (A), and remove reel drive cover (B)

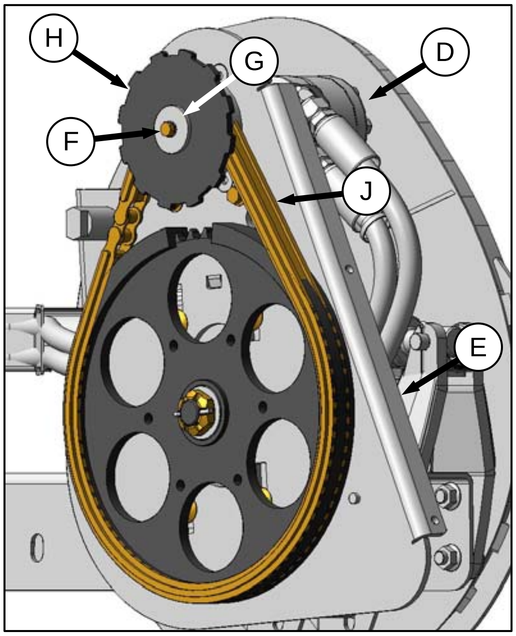


c. Loosen bolts (C).

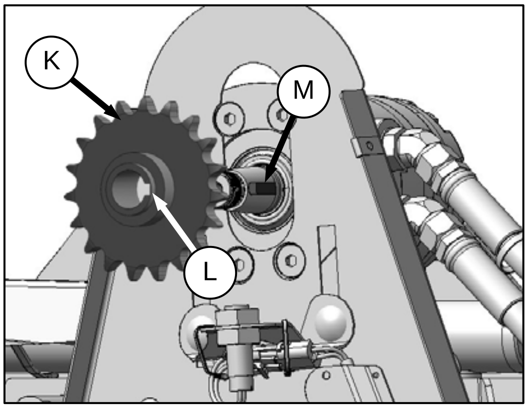
d. Slide motor (D) and motor mount (E) down towards reel shaft.

e. Remove bolt (F), lock washer, and flat washer (G).

f. Remove speed sensor disc (H) (if installed).



g. Slip chain (J) off drive sprocket.



h. Remove sprocket (K) from shaft.

IMPORTANT

Do NOT use pry bar and/or hammer to remove sprocket. This will damage the motor. Use a puller if sprocket does not come off by hand.

i. Align keyway (L) in new sprocket with key (M) in shaft, and slide new sprocket onto shaft.

j. Install speed sensor disc (H) (if applicable) onto shaft, and secure with flat washer (G), lockwasher, and bolt (F).

k. Torque bolt to 18 lbf·ft (24 N·m).

l. Position chain (J) around sprockets.

m. Slide motor (D) and motor mount (E) upward until tension on chain (D) is such that hand force deflects the chain 1/8 inch (3 mm) at mid-span.

n. Tighten nuts (C), and re-check tension.

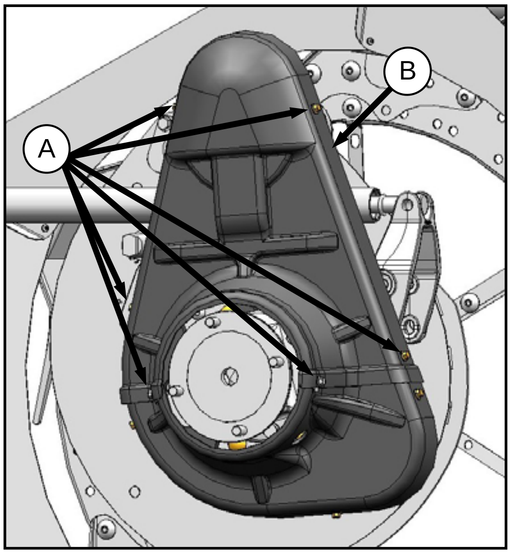
o. Re-install drive cover.

8.12.6 Reel Drive U-joint: Double Reel

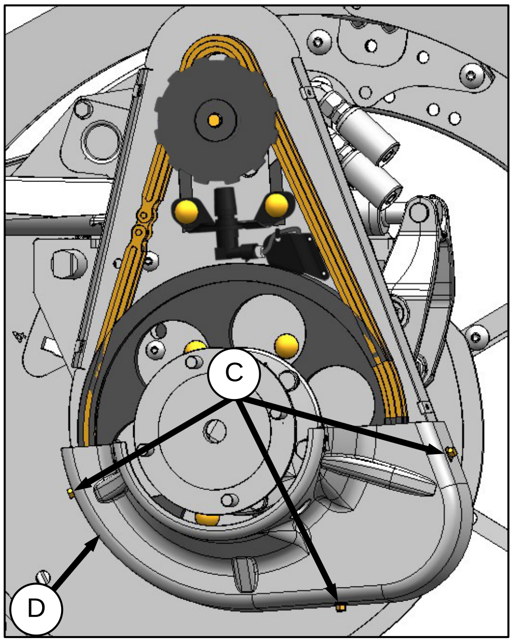
Lubricate the U-joint in accordance with the requirements in Section 8.4.*5* Lubrication and Servicing. If the U-joint is severely worn or damaged, it should be replaced.

8.12.6.1 U-joint Replacement

a. Lower header and reel, shut down combine, and remove key from ignition.

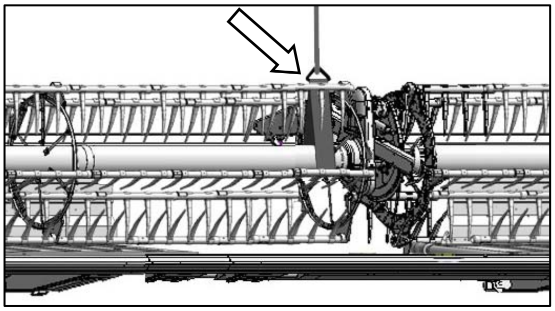


b. Remove six screws (A), and remove upper cover (B).



UNRELATED PARTS HIDDEN FOR CLARITY

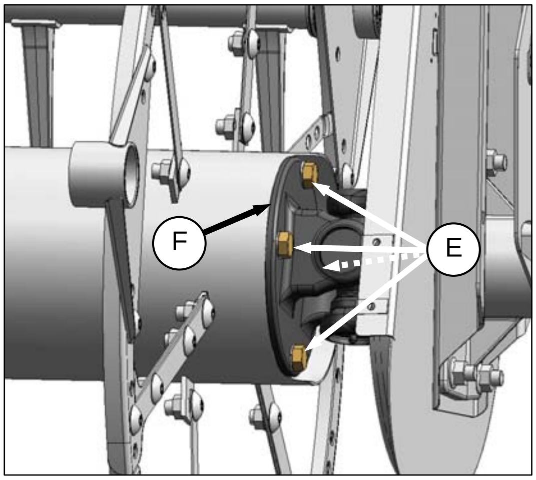
c. Remove three screws (C), and remove lower cover (D).



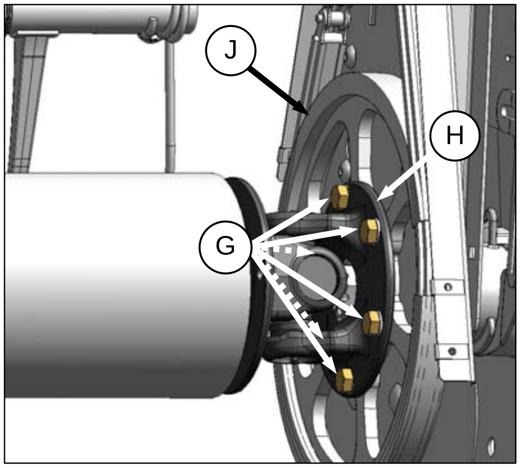
d. Support inboard end of right reel with a front end loader and nylon slings (or equivalent set-up).

IMPORTANT

To avoid damaging or denting center tube, support reel as close as possible to the end disc.



e. Remove four bolts (E) attaching reel tube to U-joint flange (F), and move reel sideways to disengage sub shaft from U-joint.



f. Remove six bolts (G) attaching U-joint flange (H) to driven sprocket (J).

(continued next page)

g. Remove U-joint.

NOTE

Right hand reel may need to be moved sideways for U-joint to clear reel tube.

h. Position U-joint flange (H) onto driven sprocket (J) as shown. Install six bolts (G), and hand-tighten. Do not torque at this time.

i. Position RH reel tube against reel drive, and engage stub shaft into U-joint pilot hole.

j. Rotate reel until holes in end of reel tube and U-joint flange (F) line up.

k. Install four bolts (C), and torque to 70–80 ft·lbf (95–108 N·m).

l. Torque bolts (E) to 70–80 ft·lbf (95–108 N·m).

m. Remove temporary reel support.

n. Re-attach reel drive covers.

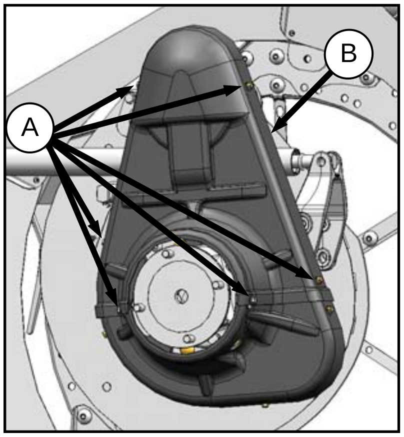
8.12.7 Reel Drive Motor

The reel drive motor does not require regular maintenance or servicing. If problems develop with the motor, it should be removed and serviced at your MacDon dealer.

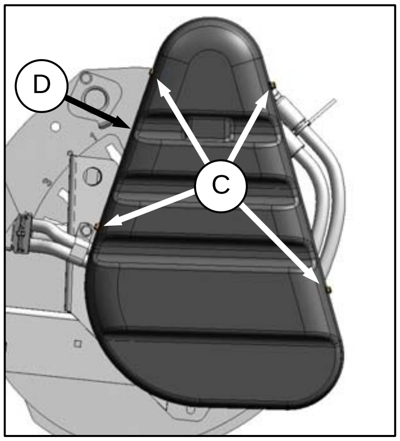
8.12.7.1 Drive Motor Replacement: High Torque

a. Lower header and reel, shut down combine, and remove key from ignition.

b. Remove reel drive cover(s):



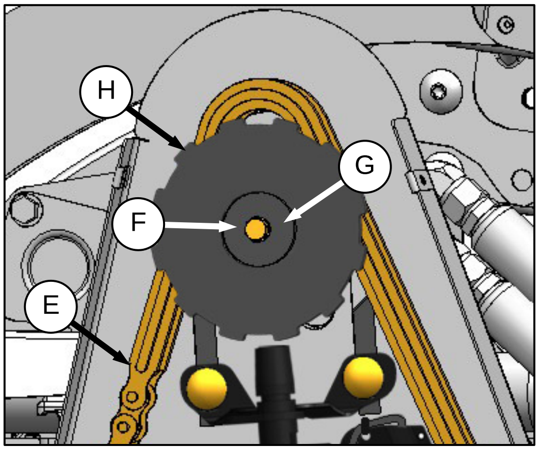
1. **Double Reel:** Remove six screws (A), and remove upper cover (B).



2. **Single Reel High Torque:** Remove four screws (C), and remove cover (D).

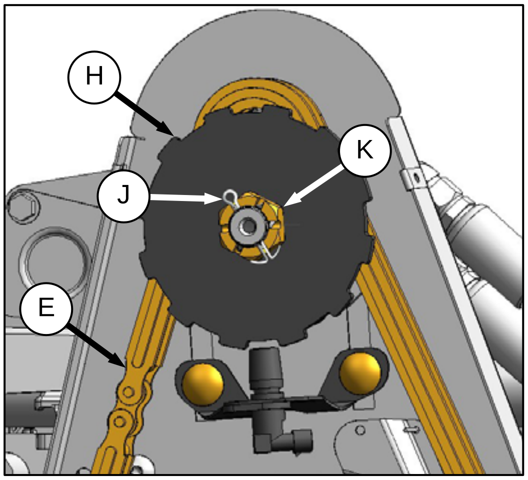
c. Loosen chain (E). Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.

d. If **STANDARD TORQUE** drive:



1. Remove bolt (F), lock washer, and flat washer (G).
2. Remove speed sensor disc (H) (if installed).

e. If **HIGH TORQUE** drive:



1. Remove cotter pin (J) and slotted nut (K).
2. Remove speed sensor disc (H) (if installed).

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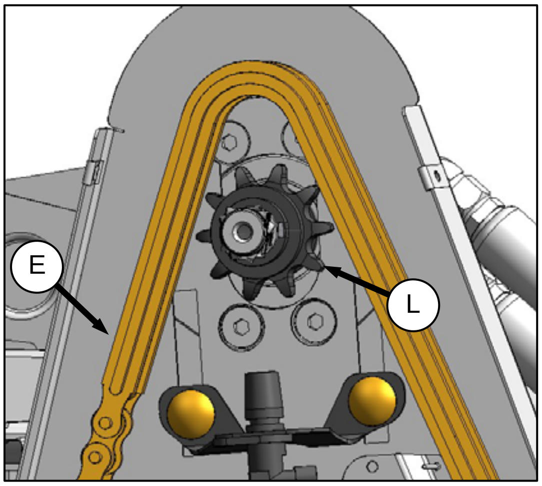
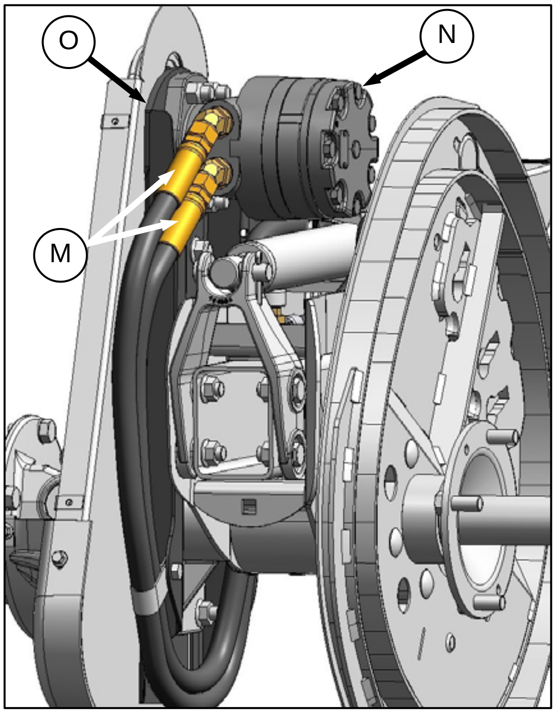


f. Slip chain (E) off drive sprocket (L).

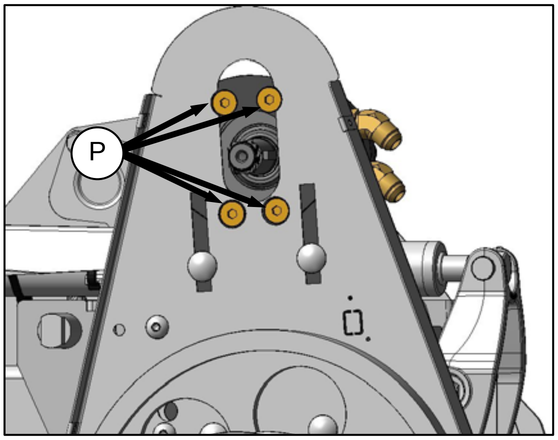
g. Remove sprocket (L) from shaft.

IMPORTANT

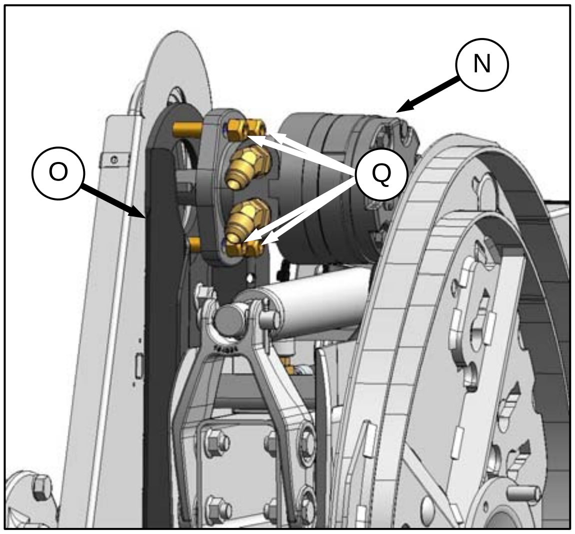
Do NOT use pry bar and/or hammer to remove sprocket. This will damage the motor. If sprocket does not come off by hand, use a puller.



h. Disconnect hydraulic lines (M) at motor (N). Cap or plug open ports and lines.



i. Slide motor (N) and motor mount (O) up or down so that attachment bolts (P) are exposed in holes and slots in back plate.



j. Remove four nuts (Q) and bolts (P), and remove motor (N).

k. Position new hydraulic motor (N) on motor mount (O), and install four countersunk bolts (P) through holes and slots in chain case to secure motor to motor mount.

l. Install nuts (Q), and torque to 75 ft·lbf (102 N·m).

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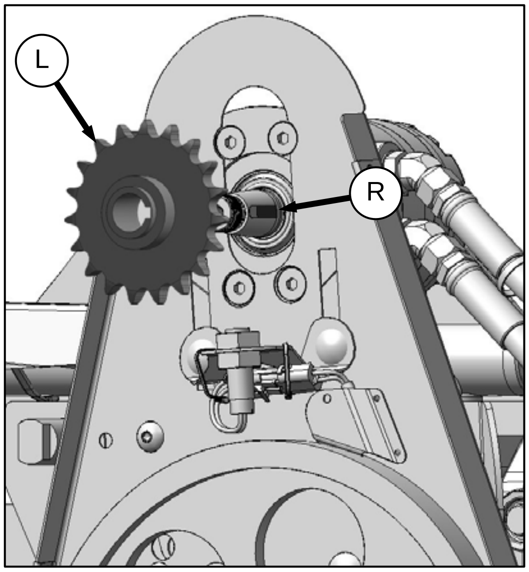
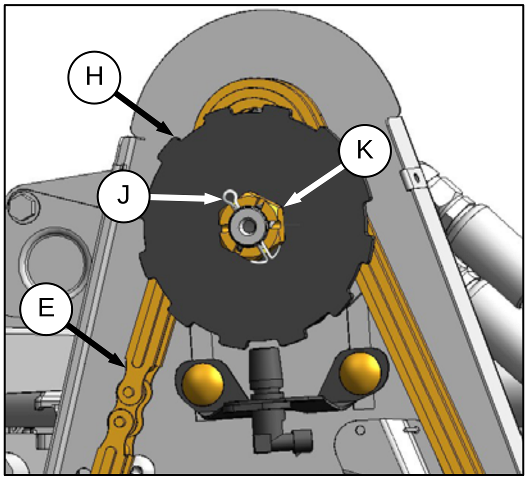


m. Align keyway in sprocket (L) with key (R) in shaft, and slide new sprocket onto shaft.

n. Slip chain over drive sprocket.

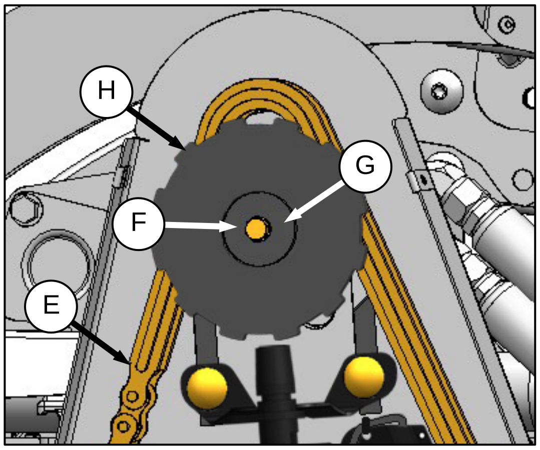
o. Install speed sensor disc (H) (if applicable) onto shaft.

p. If **HIGH TORQUE** drive:



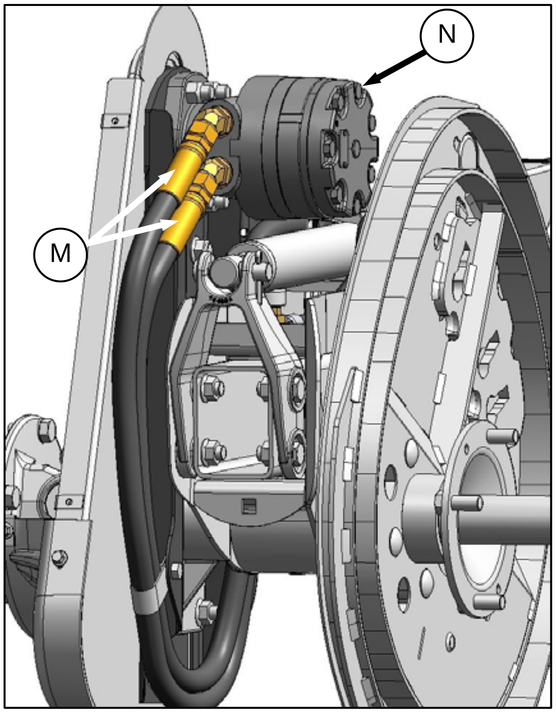
1. Install slotted nut (K), and torque to 10–20 in·lbf (1.1–2.2 N·m).
2. Install cotter pin (J). Tighten nut to next slot if required.

q. If **STANDARD TORQUE** drive:



1. Install flat washer (G), lock washer, and bolt (F).
2. Torque bolt (F) to 18 lbf·ft (24 N·m).

r. Tighten chain (E). Refer to Section 8.12.4.1 Tension Adjustment: High Torque Drive.



s. Re-attach hydraulic lines (M) to motor (N).

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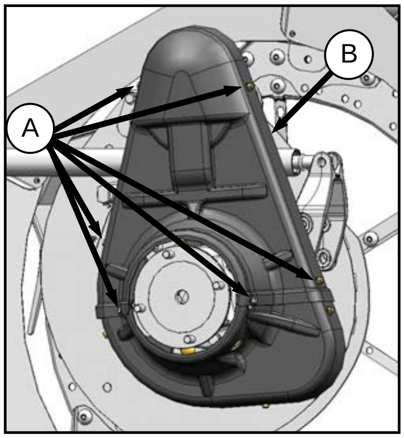
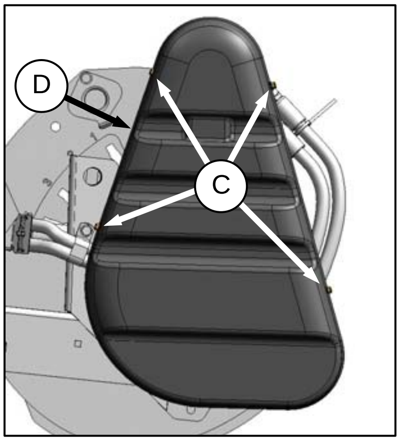
t. Re-install drive cover(s):



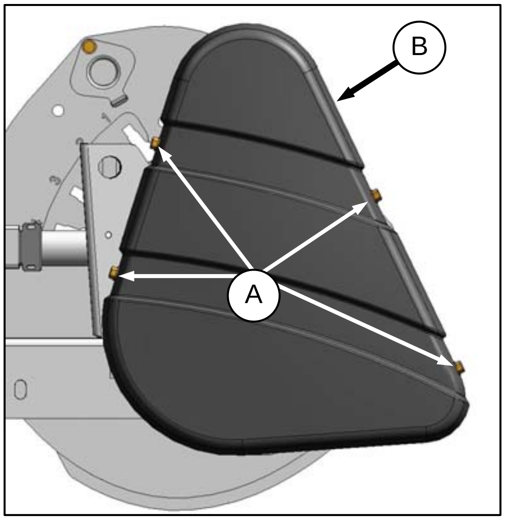
1. **Double Reel:** Position upper cover (B) onto drive, and secure with six screws (A).



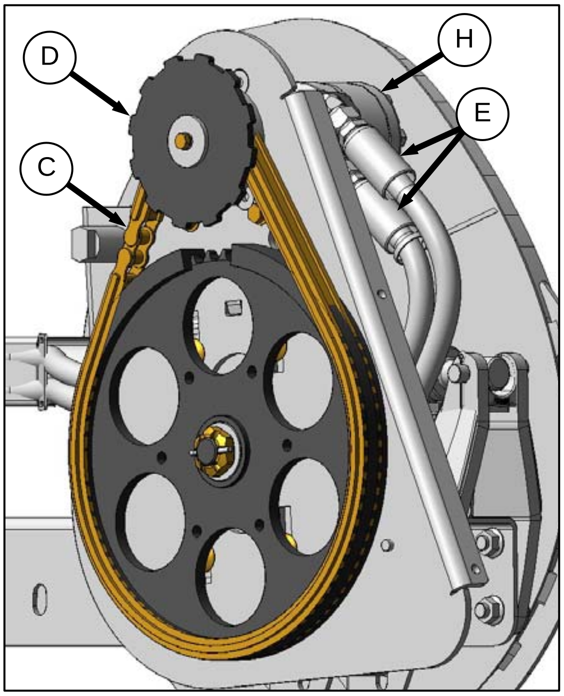
2. **Single Reel High Torque:** Position cover (D) onto drive, and secure with four screws (C).

8.12.7.2 Single Reel Drive Motor Replacement: Standard Torque

a. Lower header and reel, shut down combine, and remove key from ignition.



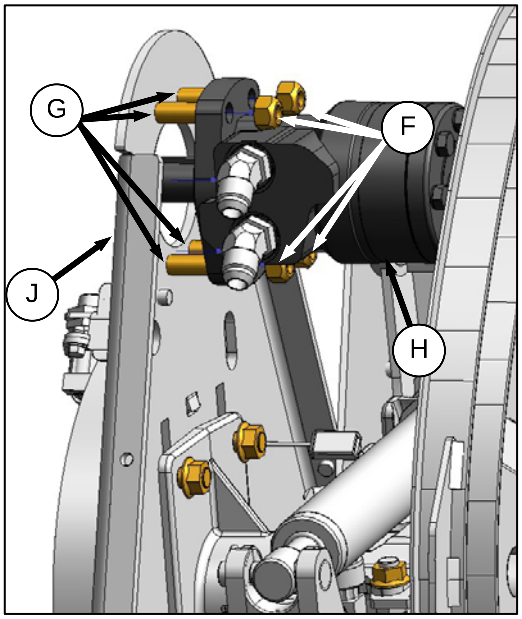
b. Remove four screws (A), and remove reel drive cover (B).



c. Loosen chain (C). Refer *to* Section 8.12.4.1 Tension Adjustment: High Torque Drive*.*

d. Remove speed sensor disc (D) and drive sprocket. Refer to Section 8.12.5.2 Sprocket Replacement: Single Reel Standard Torque Drive.

e. Disconnect hydraulic lines (E) at motor. Cap or plug open ports and lines.



f. Remove four nuts (F) and bolts (G), and remove motor (H).

g. Position new hydraulic motor (H) on chain case (J), and install four countersunk bolts (G) through holes in chain case to secure motor.

h. Install nuts (F), and torque to 75 ft·lbf (102 N·m).

i. Re-install sprocket and speed sensor disc (D). Refer to Section 8.12.5.2 Sprocket Replacement: Single Reel Standard Torque Drive.

j. Tension the chain (C). Section 8.12.4.1 Tension Adjustment: High Torque Drive.

k. Re-attach hydraulic lines (E) to motor (H).

l. Re-attach reel drive cover (B) with 4 screws (A).

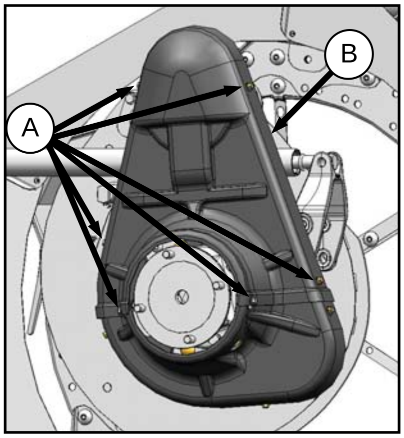
8.12.8 Reel Speed Sensor

WARNING

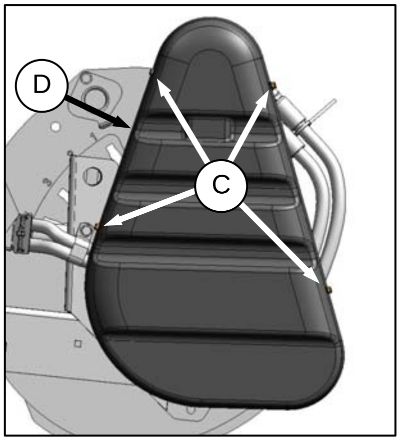
Stop combine engine, and remove key before making adjustments to machine. A child or even a pet could engage the drive.

a. Lower header and reel, shut down combine, and remove key from ignition.

b. Remove reel drive cover:

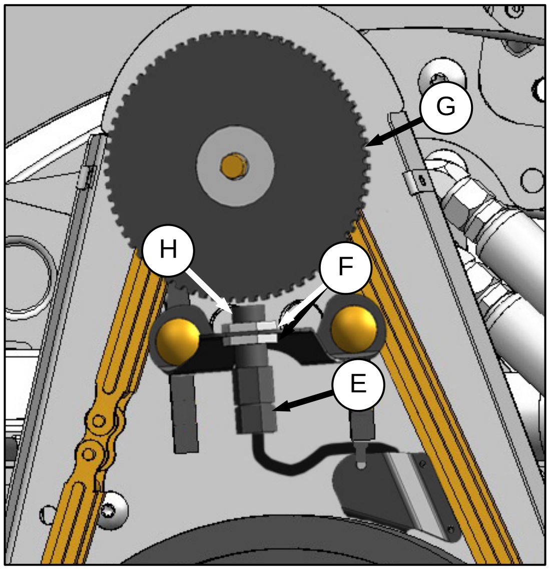


1. **Double Reel**: Remove six screws (A), and remove upper cover (B).



2. **Single Reel High Torque:** Remove four screws (C), and remove cover (D).

8.12.8.1 John Deere



a. Maintain a 1/8 in. (3 mm) gap between sensor disc (G) and sensor (H). Adjust with nuts (F) as required.

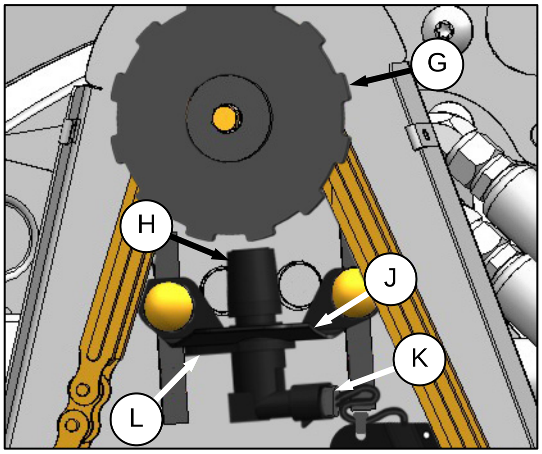
b. Replace sensor as follows:

1. Disconnect connector (E).
2. Remove top nut (F), and remove sensor (H).
3. Remove top nut from new sensor (H), and locate in support.
4. Secure with top nut (F).
5. Adjust gap between sensor disc (G) and sensor (H) to 1/8 in. (3 mm).
6. Connect to harness (E) to sensor.

IMPORTANT

Ensure sensor electrical harness does NOT contact chain or sprocket.

8.12.8.2 Lexion 500



a. Maintain a 1/8 in. (3 mm) gap between sensor disc (G) and sensor (H). Adjust by bending support (J).

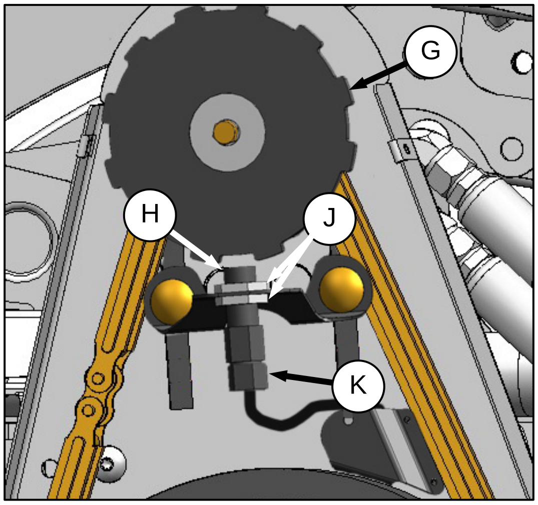
b. Replace sensor as follows:

   1. Disconnect connector (K).
   2. Remove screw (L) attaching sensor, and remove sensor (H).
   3. Locate new sensor in support, and secure with screw (L).
   4. Adjust gap between sensor disc (G) and sensor (H) to 1/8 in. (3 mm) by bending support (J).
   3. Connect to harness at (K).

IMPORTANT

Ensure sensor electrical harness does NOT contact chain or sprocket.

8.12.8.3 Lexion 400



a. Maintain a 1/8 in. (3 mm) gap between sensor disc (G) and sensor (H). Adjust with nuts (J) as required.

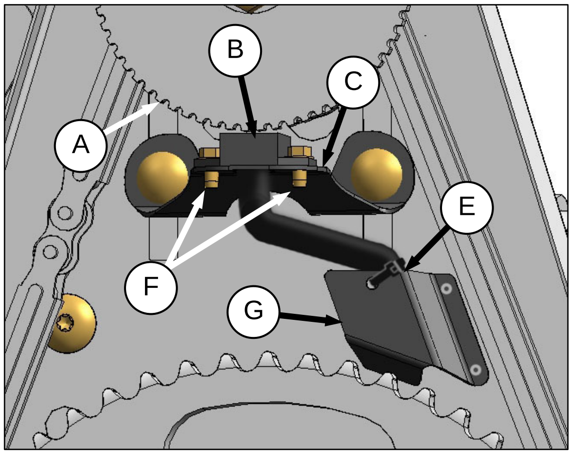
b. Replace sensor as follows:

   1. Disconnect connector (K).
   2. Remove top nut (J), and remove sensor (H).
   3. Remove top nut from new sensor, and locate in support.
   4. Secure with top nut (J).
   5. Adjust gap between sensor disc (G) and sensor (H) to 1/8 in. (3 mm) with nuts (J).
   6. Connect to harness at (K).

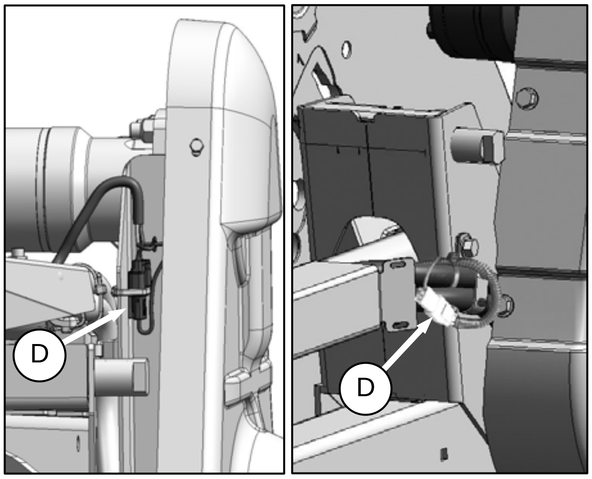
IMPORTANT

Ensure sensor electrical harness does NOT contact chain or sprocket.

8.12.8.5 AGCO



a. Maintain a .02 in. (0.5 mm) gap between sensor disc (A) and sensor (B). Adjust by bending support (C).
b. Replace sensor as follows:



DUAL REEL SINGLE REEL

1. Disconnect connector (D).
2. Cut plastic tie (E) securing harness to cover.
3. Remove screws (F), and remove sensor (B) and harness. Bend cover (G) (if necessary) to remove harness.
4. Feed wire of new sensor behind cover (G) through chain case.
5. Locate new sensor in support (C), and attach with two screws (F).
6. Adjust gap between sensor disc (A) and sensor (B) to .02 in. (0.5 mm).
7. Connect to harness at (D).

8.12.9 Reel Tines

IMPORTANT

Keep reel tines in good condition. Straighten or replace as required.

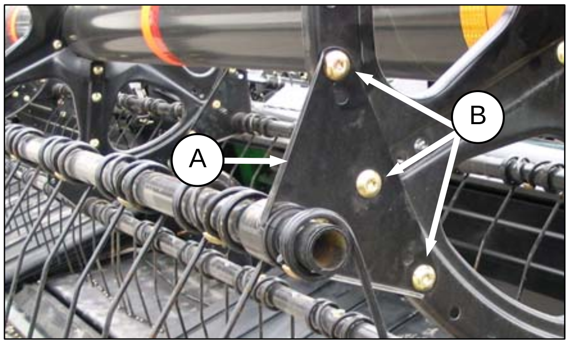
8.12.9.1 Removal: Steel Tines

CAUTION

To avoid bodily injury from fall of raised reel, always engage reel props before going under raised reel for any reason.

a. Lower header, raise reel, and engage reel props.

b. Remove tine tube bushings from the applicable tine tube at center and left discs. Refer to Section 8.12.10 Tine Tube Bushings.



c. Temporarily attach reel arms (A) to reel disc, using original attachment locations (B).

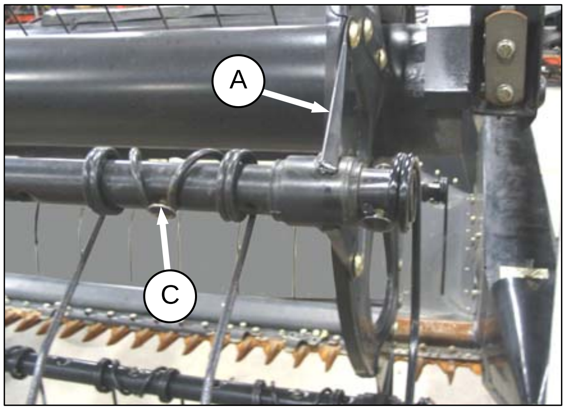
d. Cut damaged tine(s) so that it can be removed from tube.

e. Remove bolts on existing tines, and slide tines over to replace tine cut off in previous step. Remove reel arms (A) from tube as required.

8.12.9.2 Installation: Steel Tines

IMPORTANT

Ensure tine tube is supported at all times to prevent damage to the tube or other components.

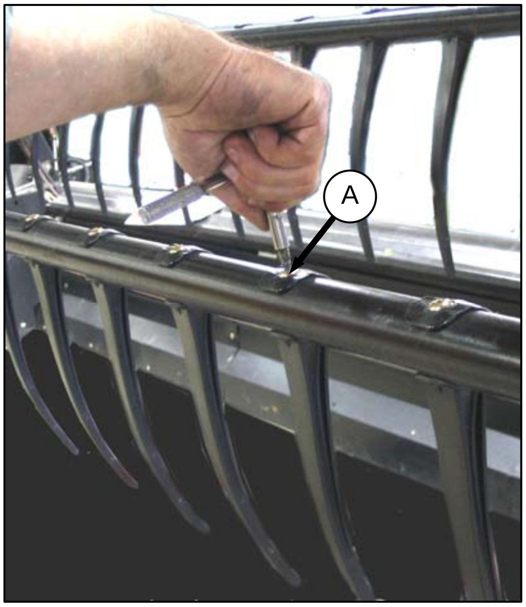


a. Slide new tines and reel arms (A) onto end of tube.

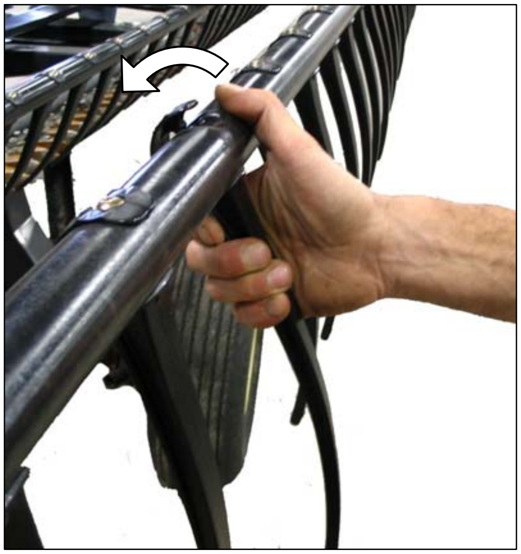
b. Install tine tube bushings. Refer to Section 8.12.10 Tine Tube Bushings.

c. Attach tines to tine bar with bolts and nuts (C).

8.12.9.3 Removal: Plastic Fingers



a. Remove screw (A) with a Torx®-Plus 27 IP socket wrench.

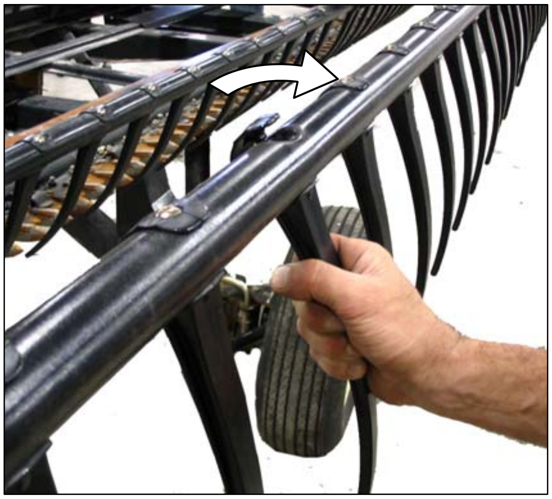


REMOVAL

b. Push finger top clip back toward reel tube, and remove from finger tube.

8.12.9.4 Installation: Plastic Fingers

a. Position finger on rear of finger tube, and engage lug at bottom of finger in lower hole in finger tube.

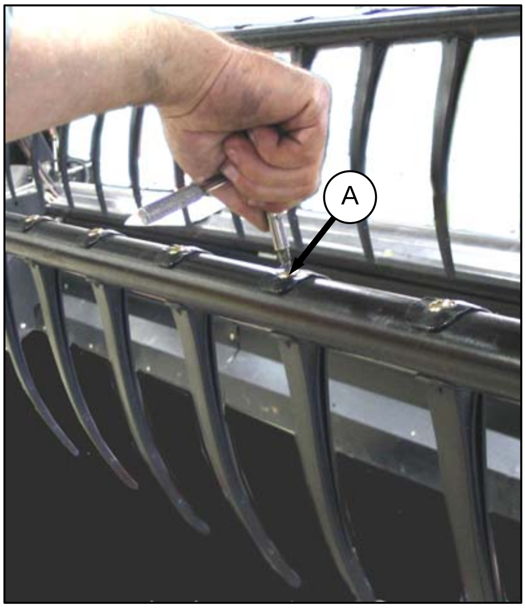


INSTALLATION

b. Gently lift top flange, and rotate finger until lug in top flange engages upper hole in finger tube.

IMPORTANT

Do NOT apply force to finger prior to tightening mounting screw. Applying force to finger without screw tightened will break finger or shear off locating pins.



c. Install screw (A), and torque to 75–80 in·lbf (8.5–9.0 N·m) with a Torx®-Plus 27 IP socket wrench.

8.12.10 Tine Tube Bushings

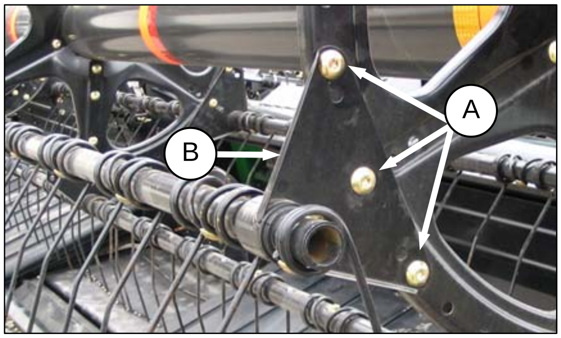
CAUTION

To avoid bodily injury from fall of raised reel, always engage reel props before going under raised reel for any reason.

Lower header, raise reel fully and engage reel stops.

8.12.10.1 Bushing Removal: 6 and 9-Bat Pick-Up Reels

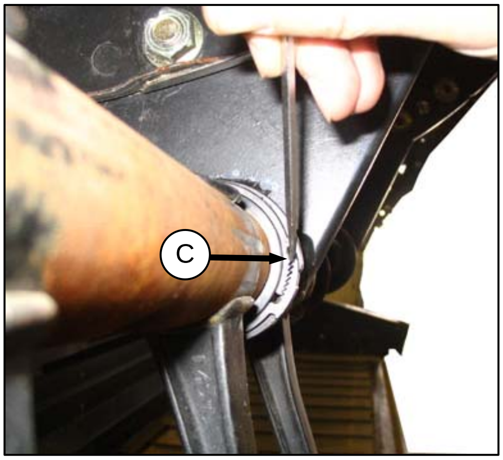
a. Remove bushings at center disc and left end disc as follows:



1. Remove bolts (A) securing arm (B) to disc at both locations.

IMPORTANT

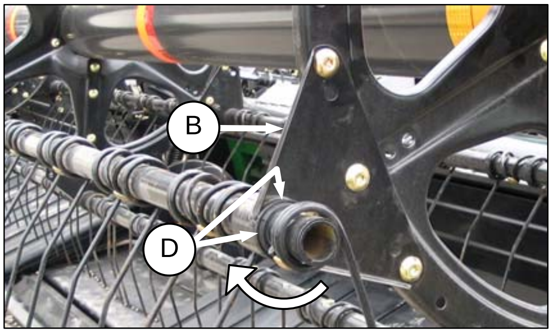
Ensure tine tube is supported at all times to prevent damage to the tube or other components.



IMPORTANT

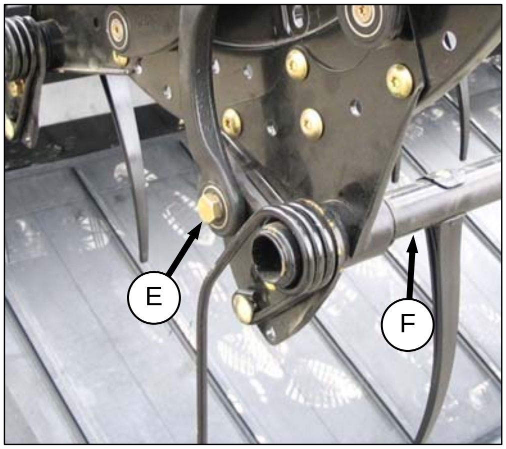
Note the hole locations in arm and disc, and ensure bolts are re-installed at original locations.

2. Release bushing clamps (C) using a small screwdriver to separate the serrations. Pull clamp off tine tube.

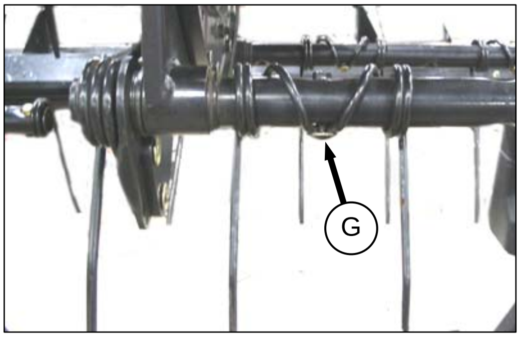


3. Rotate arm (B) clear of disc, and slide arm inboard off bushing, and remove bushing halves (D). Remove bolt from tine next to arm (or remove plastic finger) if required so that arm can slide off bushing.

b. Remove cam end bushings as follows:



1. Remove bolt (E) at on cam linkage so that tine tube (F) is free to rotate.



2. If required, remove bolt (G) securing the first tine to the left of the support so that tine is free to move inboard (to the right). If plastic finger is installed, refer to previous section for removal procedure.

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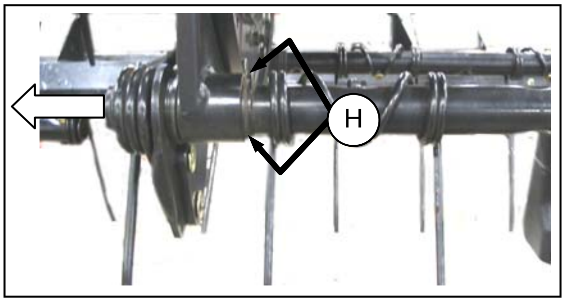
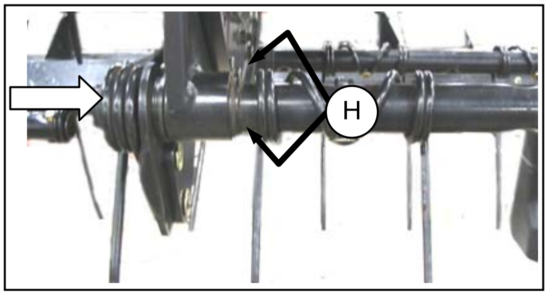


3. Slide tine tube to expose bushing. Remove bushing halves (H).

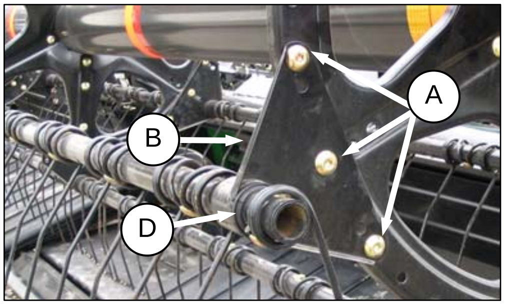
8.12.10.2 Bushing Installation: 6 and 9-Bat Pick-Up Reels

IMPORTANT

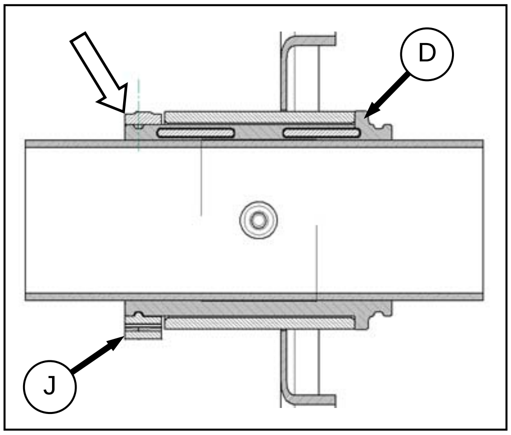
Ensure tine tube is supported at all times to prevent damage to the tube or other components.



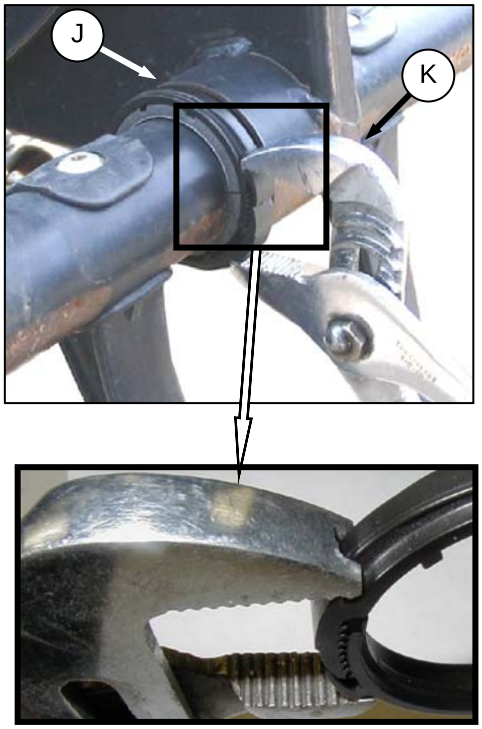
a. At cam end, position bushing halves (H) on tine tube so that lug in each bushing half locates in hole in tine tube.
b. Slide tine tube to the left side of header to locate bushings in reel arm.



c. At the center and left side disc, position bushing halves (D) on tine tube so that lug in each bushing half locates in hole in tine tube.
d. Slide reel arm (B) onto bushing, and position against disc at original location.
e. Install bolts (A) in original holes, and tighten.
f. Re-install any fingers or tines that were removed.
g. Install bushing clamps as follows:



1. Spread clamp (J), and slip over tine tube adjacent to flangeless end of bushing.
2. Locate clamp on bushings (D) so that edges of clamp and bushing are flush when clamp fits into groove on bushing and lock tabs are engaged.



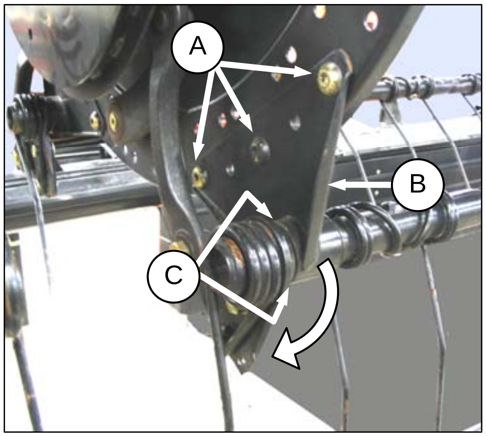
3. Tighten clamp with modified channel lock pliers (K) so that finger pressure will not move clamp.

IMPORTANT

Over-tightening clamp may result in breakage.

8.12.10.3 Bushing Removal: 5-Bat Pick-Up Reels

a. Remove bushings at cam end disc as follows:



1. Remove bolts (A) securing arm (B) to disc.

   IMPORTANT

   Ensure tine tube is supported at all times to prevent damage to the tube or other components.

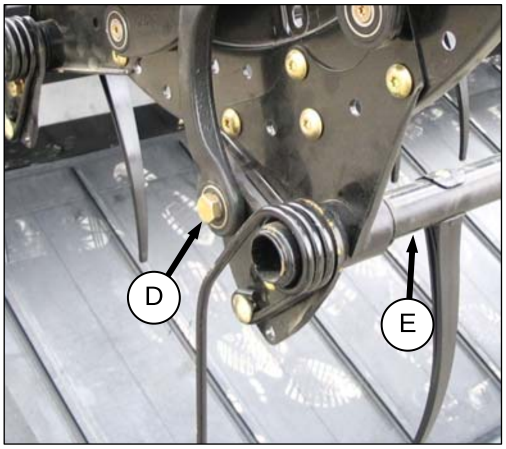
   IMPORTANT

   Note the hole locations in arm and disc, and ensure bolts are re-installed at original locations.

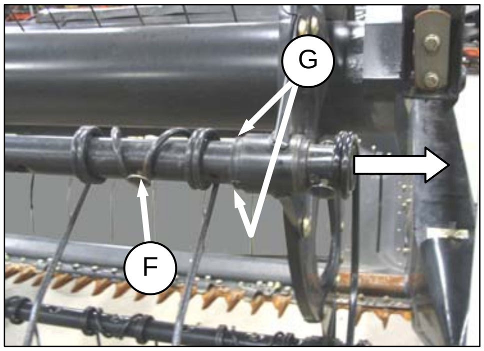
2. Remove bushing clamp as previously described.
3. Rotate arm (B) clear of disc, and slide arm off bushing. Remove bolt from tine next to arm (or remove plastic finger) if required so that arm can slide off bushing.
4. Remove bushing halves (C).

b. Remove bushings at center disc and left end disc as follows:

1. Disconnect reel arm at cam end so that tine tube is free to move. See step a.1.



2. Remove bolt (D) at on cam linkage so that tine tube (E) is free to rotate.
3. Slide tine tube outboard to expose bushings.



4. Remove bolt (F) from tine (or remove plastic finger) next to arm if required so that tube can slide through arm.
5. Remove bushing halves (G).

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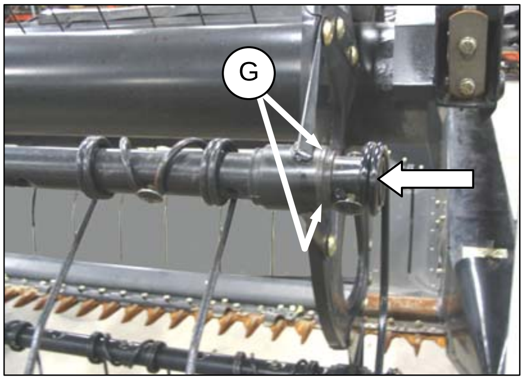
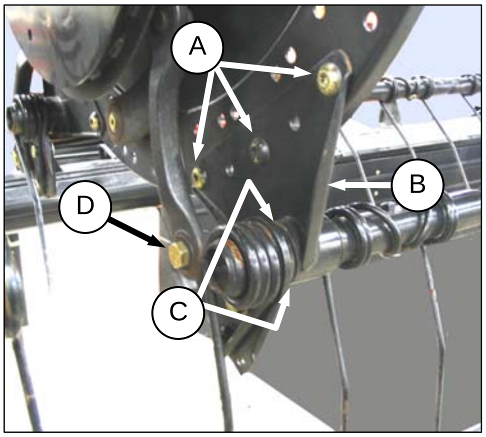
8.12.10.4 Bushing Installation: 5-Bat Pick-Up Reels



a. At center disc and left end disc, position bushing halves (G) on tine tube so that lug in each bushing half locates in hole in tine tube.
b. Slide tine tube inboard (towards cam end) to locate bushing in reel arm.



c. At the cam end disc, position bushing halves (C) on tine tube so that lug in each bushing half locates in hole in tine tube.
d. Slide reel arm (B) onto bushing, and position against disc at original location.
e. Install bolts (A) in original holes, and tighten.
f. Re-install any fingers or tines that were removed.
g. Re-install bolt (D) at on cam linkage.
h. Install bushing clamps as previously described.

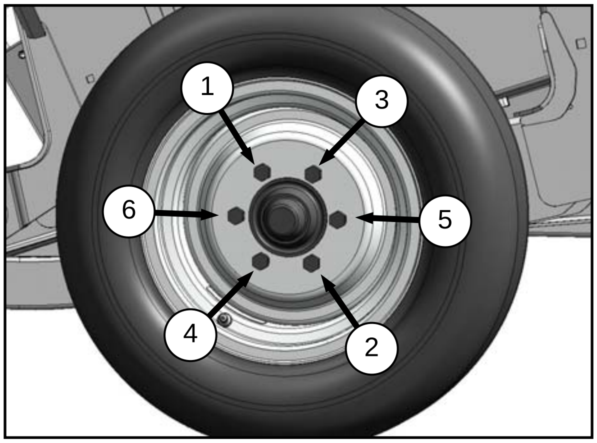
8.13 TRANSPORT SYSTEM (Optional)

8.13.1 Wheel Bolt Torque

IMPORTANT

Whenever a wheel is removed and re-installed, check torque after one hour of operation.

Maintain 80–90 ft·lbf (110–120 N·m) torque.

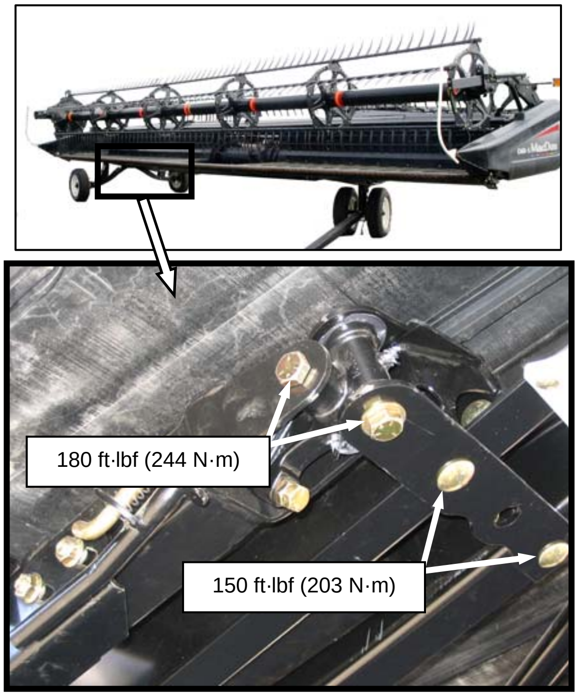


a. Check and tighten wheel bolts after the first hour of operation, and every 100 hours thereafter. Maintain 80–90 ft·lbf (110–120 N·m) torque.

IMPORTANT

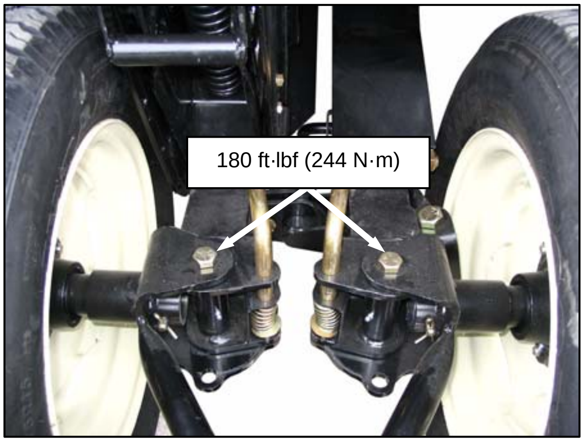
Follow proper bolt tightening sequence shown.

8.13.2 Axle Bolts



180 ft·lbf (244 N·m)

150 ft·lbf (203 N·m)



180 ft·lbf (244 N·m)

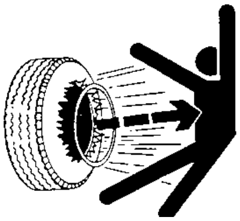
a. Check and tighten axle bolts daily until torque is maintained as shown.

8.13.3 Tire Inflation

Check tire pressure daily. Maintain pressures recommended in following table:

SIZE	LOAD RANGE	PRESSURE
ST205/75 R15	D	65 psi (448 kPa)
	E	80 psi (552 kPa)

WARNING



- **Service tires safely.**
- **A tire can explode during inflation and cause serious injury or death.**
- **Do NOT stand over tire. Use a clip-on chuck and extension hose.**
- **Never increase air pressure beyond pressure specified on tire side wall to seat the bead on the rim.**
- **Replace the tire if it has a defect.**
- **Replace a wheel rim, which has cracks, wear or severe rust.**
- **Never weld a wheel rim.**
- **Never use force on an inflated or partially inflated tire.**
- **Make sure the tire is correctly seated before inflating to operating pressure.**
- **If the tire is not in correct position on the rim, or is too full of air, the tire bead can loosen on one side, causing air to leak at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in the area.**
- **Make sure all the air is removed from a tire before removing the tire from a rim.**
- **Do NOT remove, install or make repairs to a tire on a rim unless you have the proper equipment and experience to perform the job. Take the tire and rim to a qualified tire repair shop.**

9 TROUBLESHOOTING

9.1 CROP LOSS AT CUTTERBAR

SYMPTOM	PROBLEM	SOLUTION	SECTION
Does Not Pick Up Down Crop.	Cutterbar too high.	Lower cutterbar.	7.9.1
	Header angle too flat.	Steepen header angle.	7.9.3
	Reel too high.	Lower reel.	7.9.8
	Reel too far back.	Move reel forward.	7.9.9
	Ground speed too fast for reel speed.	Reduce ground speed or increase reel speed.	7.9.5 & 7.9.4
	Reel fingers not lifting crop sufficiently.	Increase finger pitch aggressiveness.	7.9.10
		Install lifter guards.	*
Heads Shattering Or Breaking Off.	Reel speed too fast.	Reduce reel speed.	7.9.4
	Reel too low.	Raise reel.	7.9.8
	Ground speed too fast.	Reduce ground speed.	7.9.5
	Crop too ripe.	Operate at night when humidity is higher.	---
Cut Grain Falling Ahead Of Cutterbar.	Ground speed too slow.	Increase ground speed.	7.9.5
	Reel speed too slow.	Increase reel speed.	7.9.4
	Reel too high.	Lower reel.	7.9.8
	Cutterbar too high.	Lower cutterbar.	7.9.1
	Reel too far forward.	Move reel back on arms.	7.9.9
	Cutting at speeds over 6 mph (10 km/h) with high-torque (10 tooth) reel drive sprocket.	Replace with high speed (19 tooth) reel drive sprocket.	8.12.5
	Worn or broken sickle components.	Replace.	8.9
Strips Of Uncut Material.	Crowding uncut crop.	Allow enough room for crop to be fed to cutterbar.	---
	Broken sickle sections.	Replace.	8.9.1
Excessive Bouncing At Normal Field Speed.	Float set too light.	Adjust header float.	7.9.2
Divider Rod Running Down Standing Crop.	Divider rods too long.	Remove divider rod.	7.9.11

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

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SYMPTOM	PROBLEM	SOLUTION	SECTION
Bushy or Tangled Crop Flows Over Divider Rod, Builds Up On Endsheets.	Divider rods providing insufficient separation.	Install long divider rods or floating dividers.	7.9.11
Crop Not Being Cut At Ends.	Reel not frowning or not centered in header.	Adjust reel ‘frown’ or reel horizontal position.	7.9.9 & 8.12.2
	Sickle hold-downs not adjusted properly.	Adjust hold-downs so sickle works freely, but still keep sections from lifting off guards.	8.9.7
	Sickle sections or guards are worn or broken.	Replace all worn and broken cutting parts.	8.9
	Header is not level.	Level header.	7.11
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position/finger pitch.	7.9.9 & 7.9.10
	Divider runs down thick crop at ends, preventing proper feeding due to material bridging the cutter guards.	Replace 3 or 4 end guards with stub guards.	*, 8.9.6 & 8.9.7 & 10.2

9.2 CUTTING ACTION AND SICKLE COMPONENTS

SYMPTOM	PROBLEM	SOLUTION	SECTION
Ragged Or Uneven Cutting Of Crop.	Sickle hold-downs not adjusted properly.	Adjust hold-downs.	8.9.7
	Sickle sections or guards are worn or broken.	Replace all worn and broken cutting parts.	8.9
	Sickle is not operating at recommended speed.	Check engine speed of combine.	**
	Ground speed too fast for reel speed.	Reduce ground speed or increase reel speed.	7.9.5 & 7.9.4
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position/finger pitch.	7.9.9 & 7.9.10
	Cutterbar too high.	Lower cutting height.	7.9.1
	Header angle too flat.	Steepen header angle.	7.9.3
	Bent sickle, causing binding of cutting parts.	Straighten a bent sickle. Align guards.	8.9.6
	Cutting edge of guards not close enough, or parallel to sickle sections.	Align guards.	

* See your MacDon Dealer
** Refer to your Combine Operator’s Manual
*** Refer to your Technical Service Manual

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SECTION 9. TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION	SECTION
Ragged Or Uneven Cutting Of Crop (cont'd).	Tangled/tough to cut crop.	Install stub guards.	*, 8.9.6 & 8.9.7 &10.2
	Reel too far back.	Move reel forward.	7.9.9
	Loose sickle drive belt.	Adjust drive belt tension.	8.9.8
Sickle Plugging.	Reel too high or too far forward.	Lower reel or move reel rearward.	7.9.8 & 7.9.9
	Ground speed too slow.	Increase ground speed.	7.9.5
	Loose sickle drive belt.	Adjust drive belt tension.	8.9.8
	Improper sickle hold-down adjustment.	Adjust hold-down.	8.9.7
	Dull or broken sickle sections.	Replace sickle section.	8.9.1
	Bent or broken guards.	Align or replace guards.	8.9.6
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position/finger pitch.	7.9.9 & 7.9.10
	Steel pick-up fingers contacting sickle.	Increase reel clearance to cutterbar, or adjust 'frown'.	8.12.1 & 8.12.2
	Float too heavy.	Adjust springs for lighter float.	7.9.2
	Mud or dirt build-up on cutterbar.	Raise cutterbar by lowering skid shoes.	7.9.1.2
		Install cut-out sections.	*
		Flatten header angle.	7.9.3
	Sickle is not operating at recommended speed.	Check engine speed of combine.	*
Excessive Header Vibration.	Sickle hold-downs not adjusted properly.	Adjust hold-downs.	8.9.7
	Sickles on double knife drive not timed.	Adjust sickle timing.	8.9.9.3
	Sickle not operating at recommended speed.	Check engine speed of combine.	*
	Excessive sickle wear.	Replace sickle.	8.9.2 & 8.9.4
	Loose or worn sickle head pin or drive arm.	Tighten or replace parts.	8.9.1

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

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SECTION 9. TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION	SECTION
Excessive Vibration Of Adapter And Header.	Incorrect knife speed.	Adjust knife speed.	7.9.7
	Driveline U-joints worn.	Replace U-joints.	***
	Bent cutterbar.	Straighten cutterbar.	*
Excessive Breakage Of Sickle Sections Or Guards.	Sickle hold-downs not adjusted properly.	Adjust hold-downs.	8.9.7
	Cutterbar operating too low in stony conditions.	Raise cutterbar, using skid shoes.	7.9.1.2
	Float is set too heavy.	Adjust float springs for lighter float.	7.9.2
	Bent or broken guard.	Straighten or replace.	8.9.6
	Header angle too steep.	Flatten header angle.	7.9.3
Sickle Back Breakage.	Bent or broken guard.	Straighten or replace.	8.9.6
	Worn sickle head pin.	Replace.	8.9.3
	Dull sickle.		8.9.2 & 8.9.4

9.3 REEL DELIVERY

SYMPTOM	PROBLEM	SOLUTION	SECTION
Reel Not Releasing Material in Normal Standing Crop.	Reel speed too fast.	Reduce reel speed.	7.9.4
	Reel too low.	Raise reel.	7.9.8
	Reel tines too aggressive.	Reduce cam setting.	7.9.10
	Reel too far back.	Move reel forward.	7.9.9
Reel Not Releasing Material in Lodged and Standing Crop (Reel Fully Lowered).	Reel tines too aggressive for standing crop.	Reduce cam setting (1 or 2).	7.9.10
Wrapping On Reel End.	Reel tines too aggressive.	Reduce cam setting.	
	Reel too low.	Raise reel.	7.9.8
	Reel speed too fast.	Reduce reel speed.	7.9.4
	Crop conditions.	Install optional endshields.	* & 10.8
	Reel not centered in header.	Center reel in header.	8.12.3

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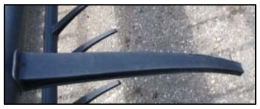
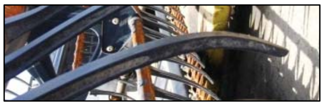
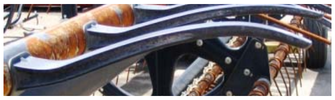
* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

(continued next page)

SYMPTOM	PROBLEM	SOLUTION	SECTION
Reel Releases Crop Too Quickly.	Reel tines not aggressive enough.	Increase cam setting.	7.9.10
	Reel too far forward.	Move reel back.	7.9.9
Reel Will Not Lift.	Reel lift couplers are incompatible or defective.	Change quick coupler.	---
Reel Will Not Turn.	Quick couplers not properly connected.	Connect couplers.	**
	Reel drive chain disconnected.	Connect chain.	8.12.4
Reel Motion Uneven Under No Load.	Excessive slack in reel drive chain.	Tighten chain.	
Reel Motion Is Uneven or Stalls In Heavy Crops.	Reel speed too fast.	Reduce reel speed.	7.9.4
	Reel fingers not aggressive enough.	Move to a more aggressive finger pitch notch.	7.9.10
	Reel too low.	Raise reel.	7.9.8
	Relief valve on combine (not on combine adapter) has low relief pressure setting.	Increase relief pressure to manufacturer's recommendations.	**
Reel Motion Is Uneven Or Stalls In Heavy Crop.	Low oil reservoir level on combine. (**NOTE**: Sometimes more than one reservoir.)	Fill to proper level.	
	Relief valve malfunction.	Replace relief valve.	
	Cutting tough crops with high-speed (19 tooth) reel drive sprocket.	Replace with high torque (10 tooth) or 14 tooth reel drive sprocket.	8.12.5
Plastic Fingers Cut at Tip. 	Insufficient reel to cutterbar clearance.	Increase clearance.	8.12.1
Plastic Fingers Bent Rearward at Tip. 	Reel digging into ground with reel speed slower than ground speed.	Raise header.	7.9.1
		Decrease header tilt.	7.9.3
		Move reel aft.	7.9.9
Plastic fingers Bent Forward at Tip (opposite of above). 	Reel digging into ground with reel speed faster than ground speed.	Raise header.	7.9.1
		Decrease header tilt.	7.9.3
		Move reel aft.	7.9.9

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

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9.4 HEADER AND DRAPERS

SYMPTOM	PROBLEM	SOLUTION	SECTION
Header Lift Insufficient.	Low relief pressure.	Increase relief pressure.	**
Insufficient Side Draper Speed.	Speed control set too low.	Increase control setting.	7.9.6
	Relief pressure too low.	Increase relief pressure to recommended setting.	***
	Worn out gear pump.	Replace pump.	
	Combine header drive too slow.	Adjust to correct speed for combine model.	**
	Pressure compensator (V7) set too low.	Adjust to increase setting.	
Draper Will Not Drive.	Drapers are loose.	Tighten drapers.	8.11.1
	Drive or idler roller wrapped with material.	Loosen draper and clean rollers.	
	Slat or connector bar jammed by frame or material.	Loosen draper and clear obstruction.	
	Roller bearing seized.	Replace.	8.11.4
	Low hydraulic oil.	Fill reservoir to full level.	8.5.1.2
	Incorrect relief setting at flow control valve.	Adjust relief setting.	***
Draper Stalling.	Material not feeding evenly off sickle.	Lower reel.	7.9.8
		Install stub guards.	*, 8.9.6 & 8.9.7 & 10.2
Adapter Auger Back-Feeds.	Auger set too high.	Check reversing mechanism inside auger.	***
		Lower auger.	8.8.1
	John Deere: Feeder chain running too slow.	Run feeder chain at high speed.	**
	John Deere: Equipped with feeder chain with 4 pitches per bar.	Replace with 6 pitch per bar feeder chain, or remove every other bar.	
	Case: Stone retarding drum installed, or smooth feeder chain bars installed.	Install standard drum or fill slots in stone retarding drum, or install serrated feed chain bars.	

* See your MacDon Dealer
** Refer to your Combine Operator’s Manual
*** Refer to your Technical Service Manual

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SECTION 9. TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION	SECTION
Hesitation In Flow Of Bulky Crop.	Header angle too flat.	Steepen header angle.	7.9.3
	Material overload on drapers.	Increase side draper speed.	7.9.6
		Install upper cross auger.	*
		Add flighting extensions.	7.3.1.1
	Material accumulation at auger ends.	Install stripper bars.	7.3.1.2
	Case: Stone retarder blocks interfering with crop flow.	Adjust blocks to minimum height.	**
	Side drapers running too fast, piling material in center of feeder draper.	Reduce header side draper speed.	7.9.6
	Feed chain drum too low.	Move drum to corn position.	**
Adapter Auger Wraps Crop.	Crop susceptible to wrapping (flax).	Add flighting extensions or stripper bars.	7.3.1.1 7.3.1.2
	Auger speed too fast.	Install slow down kit.	*
Combine Feeder Drum Wraps Crop.	Crop susceptible to wrapping (flax).	Add stripper bars.	7.3.1.2
Crop Backs Up Or Hesitates On Feed Draper.	Feed draper stalling.	Clean debris from poly pan.	---
		Check feed draper tension.	8.11.3
		Replace roller bearing(s).	***
		Check feed draper motor.	
	Heavy crop plugging between adapter auger and feed draper.	Check auger clearance.	8.8.1
		See also “Adapter Auger Back-Feeds” on previous page.	---
	Auger speed too low.	Install auger speed up kit.	*
Crop Back Feeds On Center Feed Draper.	Excessive clearance from auger to drive roller.	Lower auger.	8.8.1
	Auger speed too slow.	Install auger speed-up kit.	*
Side Drapers Back-Feed.	Side drapers running too slow in heavy crop.	Increase side draper speed.	7.9.6
Crop Is Thrown Across Opening And Under Opposite Side Draper.	Side drapers running too fast in light crop.	Reduce side draper speed	
	Excessive overlap of feeder draper.	Center side draper drive rollers over feed draper side deflectors.	***
Crop Feeding Into Feeder House At Sides More Than At Center.	Auger not delivering crop properly.	Add flighting extensions.	7.3.1.1
		Add stripper bars.	7.3.1.2
		Remove auger outer tines.	8.8.4
		Install auger speed-up kit.	*

* See your MacDon Dealer
** Refer to your Combine Operator’s Manual
*** Refer to your Technical Service Manual

(continued next page)

SECTION 9. TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION	SECTION
Crop Feeding Into Feeder House At Center More Than At Sides.	Auger not delivering crop properly.	Add auger outer tines.	8.8.4
		Remove flighting extensions.	7.3.1.1
		Remove auger stripper bars	7.3.1.2
Crop Getting Stuffed In Gap Between Cut-out in Endsheet and Knife Head.	Crop heads leaning away from knife head hole in endsheet.	Add shields, except in damp/sticky soils.	7.10
Material Accumulates Inside Or Under Front Edge Of Draper.	Deck height improperly adjusted.	Adjust deck height.	8.11.5
Material Wrapping At Upper Cross Auger Beater Bars.	Crop conditions do not require beater bars.	Remove beater bars.	7.14
Material Accumulating On End Deflectors And Releasing In Bunches.	End deflectors too wide.	Trim deflector or replace with narrow deflector (MacDon part #172381).	--
Cutterbar Pushes Dirt Across Entire Length.	Header height too low.	Raise header height with float optimizer control.	**
	Float locked.	Unlock float.	7.9.2
	Float set too heavy.	Adjust float.	
	Header angle too steep.	Adjust header to optimum angle.	7.9.3
Pushing Dirt At Combine Adapter Lower Beam.	Combine face plate incorrectly installed.	Remove adapter and check combine faceplate.	**
	Header angle too flat.	Increase header angle.	7.9.3
	Float too light, header legs do not rest on stops.	Adjust to heavier float.	7.9.2
Wing Float Assembly Binding.	Float locked out.	Disengage adapter float lockout.	
	Float set too heavy.	Adjust adapter springs to lighter float.	
Reel Contacts Endsheet, Especially In Smile Condition.	Reel not centered in header.	Center reel in header.	8.12.3
	Loose reel arm brace.	Center reel in header and tighten brace.	
Reel Fingers Being Cut At Header Hinge Points In Frown Condition.	Reel clearance inadequate.	Adjust reel clearance to cutterbar.	8.12.1
		Adjust reel frown at finger tubes.	8.12.2

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

(continued next page)

9.5 *CUTTING EDIBLE BEANS*

SYMPTOM	PROBLEM	SOLUTION	SECTION
Excessive Losses At Dividers.	Divider rod running down crop and shattering pods.	Remove divider rod.	7.9.11
	Vines and plants build up on endsheet.	Install divider rod.	
Reel Ends Wrap Up With Crop.	Uncut crop interfering on reel ends.	Add reel endshields.	7.2.3
Reel Wraps Up With Crop.	Reel too low.	Raise reel.	7.9.8
Plants Being Stripped, and Complete Or Partial Plants Left Behind.	Header being carried off ground.	Lower header to ground and run on skid shoes and/or cutterbar.	7.9.1.2
	Float set too light - rides on high spots and does not get back down soon enough.	Set float for: Dry ground: 100–150 lbf Wet ground: 50–100 lbf	7.9.2
	Reel being operated too high.	Fully retract reel cylinders.	7.9.8
	Reel too high with cylinders fully retracted.	Adjust reel height.	8.12.1
	Finger pitch not aggressive enough.	Adjust finger pitch.	7.9.10
	Reel too far back on reel support arms.	Move reel forward until the fingertips skim the soil surface with header on ground and center-link properly adjusted.	7.9.9
	Header angle too shallow.	Lengthen center-link. If cutting on ground, header angle can be increased by fully retracting lift cylinders.	7.9.3
	Reel too slow.	Adjust reel speed to be marginally faster than ground speed.	7.9.4
	Ground speed too fast.	Lower ground speed.	7.9.5
	Header skid shoes adjusted too low.	Raise skid shoes to maximum up position.	7.9.1.2
	Dirt packs on bottom of cutterbar and raises cutterbar off the ground.	Install plastic wear strips on bottom of cutterbar and skid shoes.	*
	Worn/damaged knife sections.	Replace sections or complete knife.	8.9.1, 8.9.2 & 8.9.4

* See your MacDon Dealer
** Refer to your Combine Operator’s Manual
*** Refer to your Technical Service Manual

(continued next page)

SECTION 9. TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION	SECTION
Plants Being Stripped, and Complete Or Partial Plants Left Behind (cont'd).	Dirt packing on bottom of cutterbar with poly wear strips on cutterbar and raises cutterbar off the ground.	Ground too wet. Allow soil to dry.	---
		Manually clean the bottom of cutterbar when accumulation gets unacceptable.	
	Plastic wear strip for cutterbar has been installed over top of steel wear plates.	Remove steel cutterbar wear plates when installing the plastic wear strips for cutterbar	
	Header is not level.	Level header.	7.11
	Parts of vines get caught in pointed guard tip. (Occurs more in row-cropped beans that are hilled from cultivating.)	Install stub guard kit.	*, 8.9.6 & 8.9.7 & 10.2
Plant Vines Pinched Between Top Of Draper And Cutterbar.	Cutterbar has filled up with trash with draper to cutterbar gap properly adjusted.	Raise header fully at each end of field or as required and shift decks back and forth to help clean out cutterbar.	---
	Shifting of decks with header raised does not clean out cutterbar debris.	Manually remove debris from cutterbar cavity to prevent damage to drapers.	
Crop Accumulating At Guards And Not Moving Rearward Onto Drapers.	Reel finger pitch not aggressive enough.	Increase finger aggressiveness (cam position).	7.9.10
	Reel too high relative to knife.	Re-adjust reel minimum height with cylinders fully retracted.	8.12.1
	Reel too far forward of cutterbar C-section.	Re-position reel.	7.9.9
Cutterbar Guards Breaking.	Float insufficient.	Increase float.	7.9.2
	Excessive amount of rocks in field.	Consider installing optional stub guards. **Tip**: Experiment with a few guards on a section of cutterbar to compare the performance of the two different styles of guards.	*, 8.9.6 & 8.9.7 & 10.2
Reel Shattering Pods	Reel running too fast.	Reduce reel speed.	7.9.4
	Bean pods are too dry.	Cut at night with heavy dew once pods have softened.	---

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

(continued next page)

SECTION 9. TROUBLESHOOTING

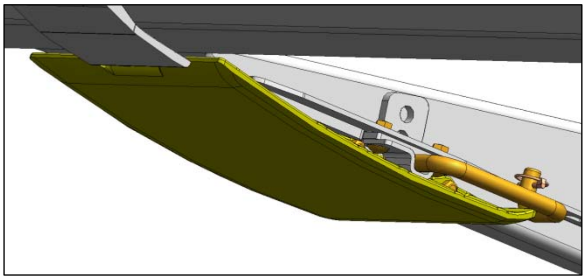
SYMPTOM	PROBLEM	SOLUTION	SECTION
Reel Shattering Pods (cont'd).	Reel finger pitch not aggressive enough.	Increase finger aggressiveness (cam position).	7.9.10
	Reel too far forward of cutterbar C-section.	Re-position reel.	
Cutterbar Pushing Too Much Trash And Dirt.	Header too heavy.	Re-adjust float to make header lighter.	7.9.2
	Header angle too steep.	Decrease header angle with lift cylinders.	7.9.3
		Shorten the center-link.	
	Regular guards push dirt and plug up with trash or plug up with trash and then push dirt.	Install stub guard kit.	*, 8.9.6 & 8.9.7 & 10.2
	Improper support for header.	Install center skid shoes on header.	*
Cutterbar Pushing Too Much Dirt In Certain Locations For Length Of Field.	Tire tracks or row crop ridges caused by seeding or spraying operations.	Cut at angle to ridges or crop rows to allow knife and guards to clean out better.	---
	Rolling land along length of field due to cultivating.	Cut at 90° to undulations, provided knife floats across without digging in.	
Cutterbar Fills Up With Dirt.	Excessive gap between top of front of draper and cutterbar.	Adjust front deck hooks to obtain proper clearance between cutterbar and draper.	8.11.5
		Raise header fully at each end of field or as required and shift decks back and forth to help clean out cutterbar.	---
Reel Carries Over Odd Plants In Same Location.	Reel fingers (steel) bent and hook plants out of the crop flow on drapers.	Straighten fingers (steel).	---
	Dirt accumulation on end of fingers do not let plants slide off fingers over drapers.	Raise reel.	7.9.8
		Adjust reel fore and aft location to move fingers out of the ground.	7.9.9
Reel Carries Over Excessive Amounts Of Plants Or Wads.	Excessive accumulation of crop on drapers (up to height of reel center tube).	Increase draper speed.	7.9.6
	Finger pitch too retarded.	Increase finger pitch.	7.9.10

* See your MacDon Dealer
** Refer to your Combine Operator's Manual
*** Refer to your Technical Service Manual

10 OPTIONS AND ATTACHMENTS

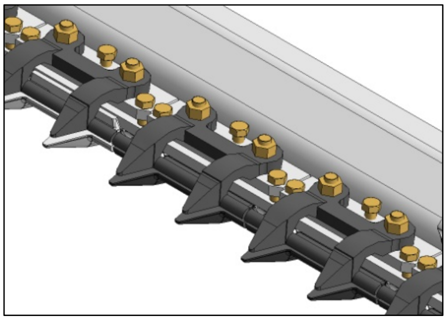
See your MacDon Dealer for availability and ordering information.

10.1 ADJUSTABLE SKID SHOES WITH POLY COVER



Inner skid shoes are available as an optional attachment. They are recommended for cutting on the ground.

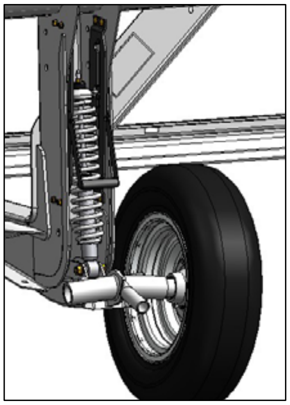
10.2 STUB GUARD CONVERSION KIT



Stub guards, complete with top guides and adjuster shoes are designed to cut tough crops.

Installation and adjustment instructions are included with the kit.

10.3 STABILIZER WHEELS



Available as an attachment, the stabilizer wheels help stabilize the header in field conditions that would otherwise cause the header to bounce and result in uneven cutting height.

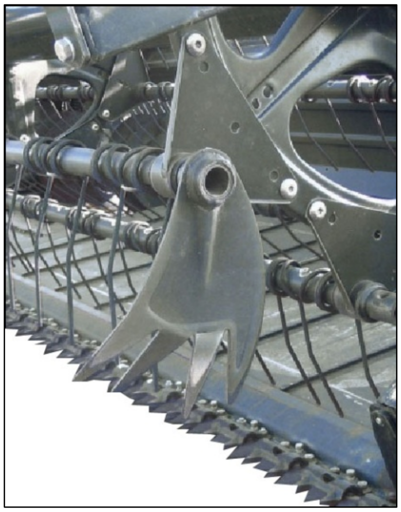
Installation and adjustment instructions are included with the kit.

10.4 STABILIZER/TRANSPORT WHEELS

Available as an attachment, stabilizer/transport wheels help stabilize the header in field conditions that would otherwise cause the header to bounce and result in uneven cutting height.

The wheels convert to Transport mode to allow the header to be towed behind the combine, or pick-up at slow speed.

10.5 LODGED CROP REEL FINGER KIT

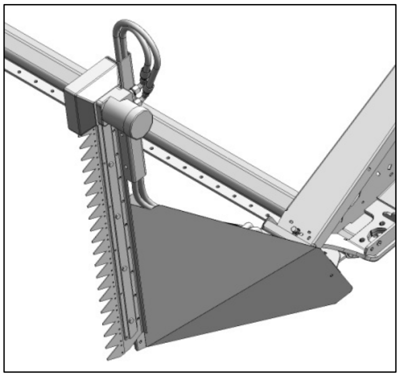


The steel fingers attach to ends of every other tine bar, and help in clearing material in heavy, lodged rice.

Two kits are required for modifying each bar of a 6-bat reel.

Installation and adjustment instructions are included with the kit.

10.6 VERTICAL KNIFE MOUNTS



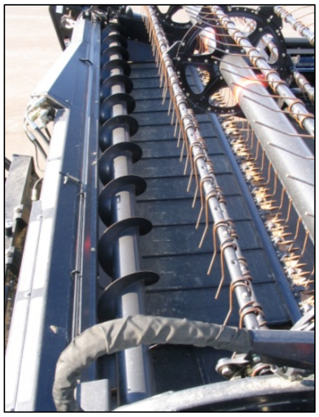
The vertical knife mounts allow installation of vertically oriented sickles onto both ends of the header.

Two vertical knife suppliers are recommended:

- Sabre Vertical Knife: available from Canadian Agri Technologies
- Ziegler Vertical Knife: available in North America from Sunova Implement Ltd.

See your MacDon Dealer for further details. Installation and adjustment instructions are included with the kit.

10.7 UPPER CROSS AUGER



The cross auger helps deliver very bulky crops across the header onto the windrow or into the combine.

Installation and adjustment instructions are included with the kit.

10.8 REEL ENDSHIELD KIT

The steel shields attach to ends of the reel and help in clearing material in heavy hard to cut crops.

Installation and adjustment instructions are included with the kit.

10.9 ROCK RETARDER KIT

The rock retarder kit keeps rocks from rolling past the cutterbar and onto the drapers.

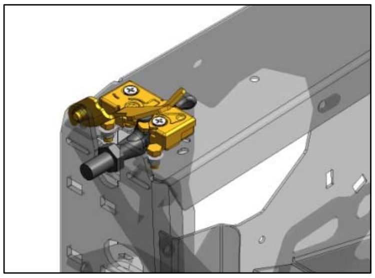
Installation instructions are included with the kit.

10.10 RICE DIVIDER RODS

The rice divider rods attach to the LH and RH endsheet cones, and perform the same function in tall and tangled rice crops as standard equipment crop dividers.

Installation instructions are included with the kit.

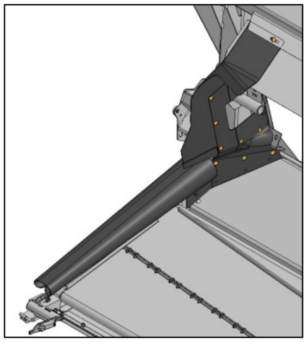
10.11 DIVIDER LATCH KIT



The latches, which attach to the endsheets, allow for quick removal of endsheet divider cones to accommodate storage and if required, to reduce the transport width of the header.

Installation instructions are included with the kit.

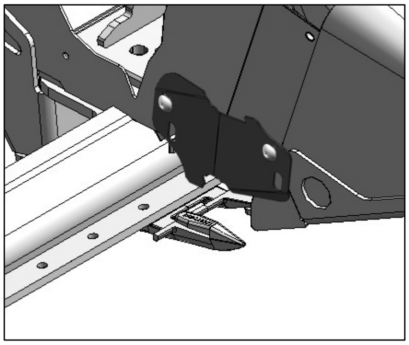
10.12 DELICATE SEED SAVER KIT



It is a kit that encloses the transition area of the feed draper and side draper area near the front of the header and also includes side rubber flaps to close off areas in between the adapter and header.

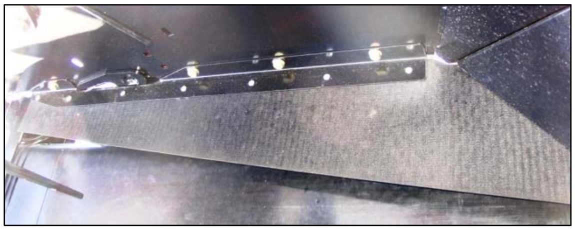
This kit is NOT recommended for use if there are rocks present.

10.13 KNIFE HEAD SHIELD



The shields attach to the endsheets, and reduce the knife head opening to prevent cut crop from accumulating over the knife head. They are slightly different depending on header size. See Parts Catalog for details.

10.14 DRAPER WIDE DEFLECTOR KIT



Rubber deflectors that attach to the inboard side of the endsheets, prevent material from falling through the gap between the endsheet and draper.

11 UNLOADING AND ASSEMBLY

Refer to header specific instruction for the unloading, assembly and set-up procedures that are included with your shipment, according to the following table:

SHIPPING DESTINATION	HEADER DESCRIPTION	INSTRUCTION PART NUMBER
NORTH AMERICA	D65 HARVEST HEADER® AND CA25 ADAPTER	MD #169602
EXPORT	D65 HARVEST HEADER® AND CA25 ADAPTER	MD #169604

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